WEST MARKETING ISSUE
Pages 9-16

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Farm Income Report Has Cheerful Sales Overtones

By JOHN CIPPERLY, Croplife Washington Correspondent

WASHINGTON — The U.S. Department of Agriculture Farm Income Report, covering the first quarter of 1958, has a cheerful message for the agricultural chemical industry.

News that on an annual basis farm income for the first quarter of this year has advanced by approximately $1.3 billion over the same period in 1957 to an annual level of $13 billion should provide a confident buying attitude within the farm communities where fertilizer and pesticides play a substantial and consequential role in making farm profits.

This official farm income information from USDA confirms what has already been forecast by the responsible leaders of the fertilizer industry here in conversations to Croplife. They say that sales forces of the chemical companies have sensed a swell of optimism among farmers in the Corn Belt and Great Plains states.

Up to this time the only drawback to an already growing fertilizer sales record has been a wet spring and late winter, which has delayed or deferred deliveries of fertilizer materials to the point of consumption.

The farm market is there as always and this year it represents an optimistic market buoyed by excellent conversion rates for grains in animals. Farmers are this year walking corn off farms in swine or livestock or in poultry products.

All the way through the farm communities good prices levels for farm commodities are laying the foundation for a brisk fertilizer and pesticidal chemical sales year.

This report notes some relaxation in the pace of the farm price advance as supplies of some farm products increase, but even should such a mild correction occur USDA notes that farmers realized net income in 1958 is expected to be from 5 to 10% higher than the $11.5 billion realized in 1957.

It is to that statement that the fertilizer and pesticidal chemical industry should gear its sales approach, pointing up the obvious additional advantage of lowered costs of production available through large outturns

(Turn to FARM INCOME, page 20)

USDA Demonstrates Good Control with Granular Herbicides

WASHINGTON — Wider possibilities for chemical weed control through using herbicides in granular form have been demonstrated in recent experiments by the U.S. Department of Agriculture and cooperating state agricultural experiment stations.

Scientists of USDA's Agricultural Research Service found that granular herbicides remain in contact with crop foliage only momentarily before reaching the soil where they are needed to kill emerging weed seedlings. Since this momentary contact does the foliage little or no harm, herbicides that are highly injurious to crops in spray form may, under some conditions, be used in granular form with safety, USDA said.

Development of this method of applying herbicides was stimulated by

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Naugatuck to Ask For Advisory Committee On Aramite Proposal

— See Story on Page 19 —

NEW YORK—Officials of the Naugatuck Chemical Division, United States Rubber Co., said April 26 that it will request the Food and Drug Administration to refer its new proposal establishing a zero residue tolerance for the pesticide Aramite when used on food crops to an advisory committee of nationally-known scientists for decision.

The Food and Drug Administration published in the Federal Register a proposal that a zero residue tolerance for the chemical be established for fruit and vegetable crops. Aramite currently has a residue tolerance of one part per million for food crops. If accepted, the new tolerance proposal would mean that no food crops bearing any trace of this pesticide could legally be shipped across state lines.

According to FDA officials, their reason for the new proposal reducing the tolerance for the chemical to zero is based on toxicity data which shows that Aramite, when fed in large amounts, caused tumors in rats and dogs.

"The whole problem of judging the safety of chemicals used on food crops is a very complex one," Earle S. Ebers, vice president and general manager of Naugatuck Chemical said, "and even experts differ in their opinions.

"This is shown conclusively by the fact that in 1955, when the FDA

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American Chemical Paint Now Agchem Products, Inc.

AMBLER, PA.—The American Chemical Paint Co. has announced a change in its corporate name to Agchem Products, Inc. Officials said that since the company started 44 years ago its activities have expanded into the field of chemicals, and the firm no longer manufactures paint. The name change will not affect the capital or corporate structure.

Irrigation Water Supply Outlook in West Best in Years

WASHINGTON—Forecasts of the best irrigation water supply for the 1958 season that some areas of the West have had in six to 10 years have been reported by the U.S. Department of Agriculture.

The outlook is based on early April snow survey and related water data coordinated by the Soil Conservation Service from its own information and that supplied by the department's Forest Service and other federal, state, and local agency and private sources. This year's water supply forecast reverses a straight 7-year trend of "generally adequate in the Pacific Northwest to severely short in the Southwest's drouth areas."

For 1958, water prospects were reported adequate or better almost without exception for the 16 western states covered and British Columbia. The favorable factors include major streamflow approaching or considerably exceeding normal; substantial reservoir storage on hand this year and likely for 1959; and good soil moisture in irrigated areas, as well as wet soil under the mountain snow cover, assuring maximum runoff of available snow water.

States covered were Arizona, California, Colorado, Idaho, Kansas, Montana, Nebraska, Nevada, New Mex-

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Senate Group Asks Greater Rate Making Flexibility for Rails

Farm Haul Exemption Restrictions Also in Sub-Committee Report

WASHINGTON — A Senate Interstate Commerce Sub-committee on Surface Transportation, after hearings on the deepening crisis in the national transportation field, last week issued a report recommending eight remedial points which it believes Congress should approve at this session.

Of major importance to the fertilizer industry are the following items announced by Sen. George A. Smathers (D., Fla.), chairman of this subcommittee.

This committee proposes that the carriers be given greater flexibility as to rate fixing through an amendment to the Interstate Commerce Act by adding the following language to its rate fixing authority: "In a proceeding involving competition with another mode of transportation, the commission (ICC), in determining whether a rail rate is lower than a reasonable minimum rate, shall consider the facts and circumstances attending the movement of the traffic by the railroad and not by such other mode."

The Senate committee also made recommendations on the now highly controversial agricultural exemption on motor truck haulage in line with proposals already made by the ICC chairman. The Senate committee in its report stated: "To limit the scope and application of the agricultural commodities clause of the ICC act in accordance with ruling 107, March 19, 1958, Bureau of Motor Carriers, ICC; with the exception of frozen fruits and frozen vegetables and imported agricultural commodities

(Turn to TRANSPORTATION, page 8)

BANKER TELLS CONVENTION

Significant Advances in Markets and Income on Horizon for Western Farming

By LAWRENCE A. LONG
Editor of Croplife

LOS ANGELES — A splendid outlook for agriculture in the western states is in prospect for the years ahead, members of the Western Agricultural Chemicals Assn. were told at the group's spring meeting here April 22. A crowd of some 200 was on hand for the meeting.

J. Earl Coke, vice president of the Bank of America, San Francisco, and former under-secretary of agriculture, told his listeners that despite current problems, Western agriculture can expect significant advances in markets and income. As a basis for his optimism about the future, Mr. Coke reminded his audience that a number of factors are favorable to the development of Western agriculture. These included the increasing population in the entire country and particularly in the West; the fact that most of the crops grown in the area are much in demand rather than destined for government storage; and that through the use of chemical and mechanical aids, farmers may reduce their unit costs of production and do a more intensive job.

Quoting some population figures, the banker said that whereas the

(Turn to WACA MEETING, page 21)

Cutting Down Fertilizer Use May be a Cost, Not a Saving

By DR. VINCENT SAUCHELLI
Chemical Technologist
National Plant Food Institute

To use fertilizer is to make money.

That is one conclusion that can be drawn from the recent National Plant Food Institute study* of farmers' attitudes toward the use of fertilizer. It deserves to be emphasized by dealer, salesman and all educational agencies. Fertilizer means profit to the farmer.

The analytic report shows clearly that a high level usage of fertilizer pays off. For example, in 1956 the average gross income per acre for farmers operating 100 acres or more, regardless of crop grown, was $46. For high level users of fertilizers, the average gross income was $66. Non-users of commercial fertilizer had the relatively low gross income of $37.

Thus the farmer who used a fairly high level of fertilizer made $29 more per acre than the non-user and $20 more per acre than the general average. (High level means use is close to standard for most economical operation for crop and soil involved.)

Fertilizers are economic commodities in today's farm business. They increase both yields and nutritional quality. Business farmers have learned how to estimate the expectable gains in yield from various rates of fertilizer applications. They also can easily calculate the actual cost of materials and labor involved in a specific application of fertilizer.

Furthermore, in the case of most crops, it is generally possible to estimate weeks in advance the minimum price they will bring in the market place. Thus, the profitability of the fertilizer can be estimated as the difference between the input cost and the market return of the crop. This difference can be assessed on a cash-per-acre basis or as a percentage of the fertilizer cost.

In the large majority of farm crops the financial returns on such short-term investments represented by the fertilizer cost can rarely be matched by other forms of investment. Many bankers are becoming aware of this fact and are now more disposed to make loans for fertilizer purchases.

When farmers cut down on fertilizer usage from previous levels, as is reported being done at present in some parts of the country, they lose considerably more farm income than the money they save from the reduction.

These use and profit relationships are brought out strikingly by the following data from Great Britain and our own country. British records published in World Crops (October, 1953), and given by the Farm Economics Branch of the University of Durham, tell a convincing story as shown in Table 1.

Sir James Scott Watson, a British authority, said in a recent speech: "The evidence from plot experiments is borne out by the findings of farm management economists. To take but one example, the farmers of the six most profitable holdings, in one particular group, spent 49 shillings per acre on fertilizers; those of the six least profitable holdings spent only 17 shillings . . . One fact is that large farmers, on the average, use more fertilizers than small farmers! Expenditure on fertilizers, as a proportion of total outgoings, is about twice as high on the over-500-acre farms as on the under-50-acre group."

A typical record from this country showing a similar use and profit relationship is one from the Missouri Agricultural Experiment Station studies. By using the amount of fertilizer recommended by the Missouri station as contrasted with the average used at the time, a high level fertilizer farmer could expect to profit as shown in Table 2.

The difference between market returns and production costs is the decisive factor in profits. A farmer may increase production costs, that is, use more fertilizer; but, if he gets more return per acre than if he did not, that increase is justified. So, you see, cutting down the total expenses may do more harm than not. Important idea is to increase output per unit (cow, beef, acre, and so) which in turn reduces crop unit cost per acre.

All this is another way of saying: To use fertilizer is to make money.

TABLE 1

	Group 1	Group 2	Group 3
Number of farms	12	11	12
Average expenditure on fertilizer per acre	29s 10d	19s 2d	8s 0d
Fodder-producing acreage per cow	3.02	3.06	3.01
Average milk yield per cow (gal.)	671	641	542
Average milk yield per acre (gal.)	222	209	180
Values of milk per acre calculated at pool prices, 1942-47	£28 13s 6d	£26 19s 11d	£23 5s 0d

TABLE 2

Reduce Unit Cost—Increase Profits

	Fertilizer Average Used	Fertilizer Recommended
Yield per acre	40 bu.	65 bu.
Corn price	$ 1.40	$ 1.40
Income	$56.00	$91.00
Cost per acre	$39.00	$55.00
Profit per acre	$17.00	$36.00

★ ★ ★

* National Analysts: A survey, released by National Plant Food Institute, 1958. (Croplife, page 1, Feb. 24, 1958.)

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Alarming Damage Spurs Oregon County To All-Out Pest Attack

PORTLAND, ORE. — Members of the Deschutes County Planning Committee have launched an all-out attack on weeds and pests as a result of a survey which shows farm damages in the county reach a total of $150,000 a year. Ed Brown, Cloverdale, Ore., and 10 other members of the committee recently prepared their weed and pest control report and presented it at the Deschutes County agricultural outlook conference.

The report shows 10% of the county's crop land is infested with weeds. In addition, gophers, mice, rabbits, sage rats and other pests take their toll. Stockmen in the county are plagued with heavy losses due to poisoning by water hemlock.

Progress in the weed and pest fight has been made. The county has been a weed control district for several years and the county court has budgeted funds for both weed and rodent control. In addition, ditch companies and federal agencies have carried on a cooperative effort to control water hemlock. Irrigation companies have sprayed ditches and laterals. The county has sprayed streams between reservoirs and irrigation canal intakes and the U.S. Forest Service has controlled hemlock above the water storage level.

The committee report points out the most serious noxious weeds are bladder catchfly, quackgrass, white top, Russian knapweed, Canadian thistle and water hemlock. Some of these weeds are prevalent in every community in Deschutes County.

To get the control job done, the committee believes community and county-wide cooperation is essential. Several recommendations have been made.

Enforcement of the county weed control law is a must, the committee believes. Fields harboring noxious weeds should be quarantined until the owner or owners destroy weed patches. Compulsory spraying should be on a county-wide level, committee members agree.

A recommendation that farmers do not purchase feed that contains noxious weed seed was approved and the committee further recommended all canals, laterals and farm ditches be treated annually to curb seed production.

Joint efforts by farmers, farm agencies and farm organizations are essential in a successful weed and pest battle, the report continues. The committee advocates the establishment of a county rodent and pest control district on a basis similar to weed control.

In addition to Mr. Brown, others who assisted in preparing the committee report include Jim Frakes and Kenneth Speakman, Tumalo; Vic Payne and Charles Park, Terrebonne; Claude Carlson, Alfalfa; Marvin Dawson, LaPine, and Bob Anderson, Redmond.

Amos W. Standish

JOINS CROPLIFE—Amos W. Standish has joined the Chicago sales office of The Miller Publishing Co., Minneapolis, announces W. E. Lingren, advertising director. Mr. Standish will represent Croplife and Farm Store Merchandising, two of the company's seven trade publications, in the Chicago area. Mr. Standish was raised on a farm. He has worked as manager of a farm implement store and in media sales for farm publications. For the past two years he has been a media sales representative for Building Supply News, Chicago. He attended Parsons College in Iowa, and resides in Park Forest, Ill.

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Diamond Chemicals

Pear Psylla Control Measures Increased

SACRAMENTO—The Board of Supervisors of El Dorado County, Cal., has adopted an emergency ordinance for the control of pear psylla in that county by increasing the powers of the county agricultural commissioner.

The ordinance authorizes the county agricultural commissioner to inspect trees in unincorporated areas and to require eradication after due notice to the owner. He also is granted authority to destroy abandoned trees as a nuisance.

Violation of the ordinance is punishable by a $500 fine or six months in jail or both. Growers have offered to help meet the expense of the control program.

Lowell D. Mobley, agricultural commissioner, has stated that El Dorado County will be out of the pear business if an effective control is not established. Mr. Mobley said that the 1956 pear crop returned $3,297,000 to El Dorado County growers.

New Farm Supply Store Opens in Texas

BIG SPRING, TEXAS—A big, new farm store has recently been opened by the Kimbell Milling Co. Housed in a 45 by 150-ft. corrugated iron building, the store is unique to this area because it has no windows. There are three large doors at the front, rear and one side, but not a window in the place. The light comes through several large translucent sheets of roofing made of strong plastic.

The store is handling a full line of fertilizers, insecticides and other agricultural chemicals. In addition, garden supplies and other products for the farm and home are being stocked.

"The feed industry is changing fast," said Ray Winans, manager, "and we must give greater service and try harder to reach more customers. Also the town trade is something the dealer can no longer ignore. I've noticed the sale of lawn and garden supplies is increasing every year."

Heretofore the company had handled feed and allied lines exclusively. This is its first venture into farm chemicals.

INSECT, PLANT DISEASE NOTES

Cold Weather Checks Florida Insect Activities

GAINESVILLE, FLA.—Observations made on insect populations in Dade, Monroe, Collier and Highlands counties during the first two weeks of April by H. V. Weems, Jr. and R. E. Woodruff showed a general scarcity of most species of insects, including many which, in most years, have been abundant during this season. There was both a paucity of insects in general and numbers of species evident, especially of the terrestrial fauna.

The evidence indicates that the severe, prolonged cold winter we have just experienced sharply reduced insect populations in general, affecting least the aquatic insects and those which over-winter in the soil.

Insects attracted to lights in largest numbers during early April consisted largely of aquatic Coleoptera and Hemiptera, lesser numbers of soil burrowing Coleoptera, and remarkably few Lepidoptera both in numbers and kinds.

Other insects which probably were sharply reduced in numbers during the winter, but which are rapidly building up their populations include those groups of insects having short life cycles, such as aphids, scales and whiteflies. These and some of the plant feeding mites are making a rapid comeback largely because insects which normally help to keep them in check have been greatly reduced in number by the cold winter and are not able to multiply as rapidly as the insect pests upon which they feed.

Leaf Roller Moths Abundant in New Jersey

NEW BRUNSWICK, N.J. — (April 22)—Red-banded leaf roller moths are abundant and a few egg masses found in southern New Jersey on April 21. Four of ten overwintering codling moths examined were pupated April 21 in Burlington County. No hatching European red mites were observed.

Blueberry blossom weevil adults have become very active during the past few days. Egg laying will begin very shortly. Sheep Pen Hill particularly is very heavily infested and all growers in this area should apply insecticide at least on the edges of the fields and ditch banks. Areas which are poorly cultivated or sodded should also receive special attention. Weevils are becoming active in South Jersey on sprinkling of bloom. Mites are showing up on foliage.

Alfalfa weevil adults have been very active in fields for 10 days or more. Observers in South Jersey report a few larvae but very little feeding has been reported generally. Pea aphid populations still appear to be low in fields observed.—Spencer H. Davis, Jr., Leland G. Merrill, Jr. and William E. Collins.

Spittlebugs, Pea Aphids Reported in Illinois

URBANA, ILL.—(April 23)—This is the first in a series of weekly bulletins on the general insect situation in Illinois (fruit insects expected), prepared by entomologists of the Illinois Natural History Survey, University of Illinois College of Agriculture, and cooperating agencies.

Spittlebugs were found hatching in northern Illinois this past week. Heaviest infestations are expected in the area north of Route 6. However, occasional fields may become heavily infested as far south as Route 24 and in the east-central area.

Pea aphids are now present in small numbers throughout Illinois. Heaviest populations are occurring in the southern third of the state. Clover leaf weevil populations remain low, and with few exceptions there is no need for insecticide applications to control this pest. If plant growth proceeds normally, there is little likelihood that a problem will develop this spring.

Corn borer winter survival ranges from 60-65% in the East St. Louis-Jacksonville area to 80-85% in the Rock Island-Rockford area. In general, overwintering populations of corn borer are lower now than at any other time since 1950 except in counties in the west-southwest section.

Fewer Grasshoppers Expected in Minnesota

ST. PAUL—A somewhat lighter grasshopper attack is expected in Minnesota this year, according to a 1957 adult and egg survey conducted by the Minnesota Department of Agriculture in cooperation with the University of Minnesota.

Minnesota county agents' reports for 1957 indicate that farmers lost almost $1.5 million from grasshopper damage where no spraying was done. Farmers who did spray saved an estimated $590,000.

"Severe" infestations are predicted for this summer in West Polk, Pennington, Marshall, Roseau, Clay, Pope, Stearns, Kanabec and part of Aitkin County.

"Threatening" infestations are expected in southeastern counties and in a belt extending roughly from there to northwestern Minnesota. The outlook is also for threatening grasshopper infestations in Cottonwood and parts of Nobles, Jackson, Murray, Brown and Watonwan counties. For other counties, infestations will be light or economically unimportant.

Cereal, Truck Crop Pests in Georgia

ATHENS, GA.—(April 25)—A heavy infestation of billbug was noted on corn in Lowndes County, with moderate to heavy infestations in Grady and Laurens counties.

Diamondback moth show light-moderate infestations on collards and cabbage in Brooks County. Colorado potato beetle has light infestations of adults on tomatoes in Cook, Lowndes, Brooks and Thomas counties. Moderate infestation of adults on tomatoes in Colquitt County. Heavy deposition of eggs on tomatoes in above counties.

Mexican bean beetle has light to moderate infestations on bunch and pole beans in Brooks, Colquitt, Thomas and Grady counties. Bean leaf beetle has light to moderate infestations on bunch and pole beans in Brooks, Colquitt, Thomas and Grady counties.

Tobacco flea beetle light to moderate on tobacco in the field in Tift, Cook, Lowndes, Brooks, Colquitt, Grady and Thomas counties. Budworm light to moderate on tobacco in Tift, Cook, Lowndes, Brooks, Colquitt, Grady and Thomas counties.—C. R. Jordan and W. C. Johnson.

Alfalfa Weevil Active in Virginia

BLACKSBURG, VA.—(April 30)—Trouble from the alfalfa weevil is rapidly becoming worse in fields which have not been treated, and farmers are advised to stand by ready with their spray rigs. Hatching has been heavy during the past week.

Another current problem is the red-banded leaf roller. Adults are near the peak of emergence in Piedmont area apple orchards, and it looks as though this species will be a serious problem in some orchards. Fruit growers can also look for trouble at this time of year from apple aphids, apple-grain aphids and tarnished plant bugs. Pea aphids are present in alfalfa fields in all parts of the state, but it is too early to determine if controls will be needed.

Mosquitoes Prepare for Early Colorado Invasion

FT. COLLINS, COLO.—(April 24)—Mosquitoes are getting ready early for their annual invasion of Colorado. Still in the "wiggler" and pupal stages, they are about a month ahead of last year, according to the Colorado Insect Detection Committee. Adult mosquitoes were reported as early as April 8.

So far, evidence of mosquito breeding has been discovered in Larimer County only.

Activity of other insect pests is beginning to pick up. The summary by area is as follows:

In Baca County the pale western cutworm has been active in wheat. On one field in the Twin Buttes area this insect was found at the rate of two per lineal foot. In another Baca County field, the brown wheat mite was observed, up to four mites per plant.

Southeastern counties report that four major insect pests—alfalfa weevil, spotted alfalfa aphid, beet leafhopper and potato psyllid—have not yet made appearances. In Larimer County adults of the ash bark beetle have been observed in flight.

Mesa County reports little insect activity in alfalfa fields. Lygus bugs averaged only two per 100 sweeps in some fields. In the Mack area of Mesa County alfalfa is now 4 to 5 inches high.

The first pea aphid of the season was found at Austin in Delta County on April 18. Field trials showed only four per 100 sweeps. Lygus bugs averaged nine per 100 sweeps.

In Montrose County the first collection from onion maggot bait traps was made on April 17. Spraying for control of the adult alfalfa weevil is completed, and little insect activity is noted in alfalfa fields. Garfield County also reports little activity in alfalfa. Other crops have not yet been planted.

Oklahoma Reports Flea Beetle Infestation

STILLWATER, OKLA.—Flea beetles are working on young corn in central and eastern Oklahoma. Infestation is fairly widespread in a 60-mile wide area extending south from Oklahoma City through Pauls Valley, Sulphur and Ardmore, with some damage noted in the Bixby area in eastern Oklahoma, OSU entomologists say.

"We have three men in the areas where the flea beetles have been reported to determine which of the 10 or 15 kinds of beetles common to the state this particular trouble maker is," Dr. D. E. "Mike" Howell said. "We also want to determine if possible just how extensive the damage is."

Insect Activity Light in Indiana

VINCENNES, IND.—At the present time insect activity is light on both apples and peaches. Growers should concentrate on the control of diseases, especially apple scab, cedar apple rust and brown rot.

Red-banded leaf roller adults have continued to lay eggs. Eggs have not hatched to date. Control measures will be needed at the time of the calyx spray where egg masses can be readily found.

European red mite populations continue to be relatively light to date. About 25% of the overwintering codling moth larvae had pupated by April 28. Only a few tarnished plant bug adults remain in peach orchards. Peak activity occurred the week of April 14.

Plum curculio populations are about the same in peach orchards as on April 21. Peak activity has not been reached. Infestations are very light in commercial orchards although spray protection is needed. Stink bug populations continue to be light in peach orchards. They will likely increase as soon as warmer weather prevails.—D. W. Hamilton.

California Gets Mosquito Warning

SACRAMENTO — The California Department of Public Health has warned California householders to be on the alert against an anticipated invasion of mosquitoes breeding in ponds left by recent heavy rains and high streams.

Theodore Smith, a mosquito control specialist in the department, warned that the expected increase in the number of mosquitoes may mean an outbreak of encephalitis, the disease which attacks both humans and animals.

"We are afraid that this year, if present trends continue, will bring perhaps as big an outbreak of encephalitis as that of 1952," Mr. Smith said. "We expect extremely bad conditions starting in May or June and from then until fall."

Apple Pests Noted In Massachusetts

AMHERST, MASS.—(April 29)—Rosy aphids are being found on susceptible varieties not yet treated for aphids. Plant bugs are out feeding on buds during warm days. Red mite will start hatching just before bloom where no oil was used. All stages of 2-spotted mite can be found on leaves of the lower spurs and on ground cover plants.—C. J. Gilgut and E. H. Wheeler.

Forage Pests on Increase in Delaware

NEWARK, DEL.—(April 22)—Adults and eggs of red-banded leaf roller observed April 16 in Kent County. Plum curculio jarred from peach trees April 21 (none present April 19). A species of stink bug also obtained from peach trees.

Alfalfa weevil larvae are increasing in numbers. Clover leaf weevil and lesser clover leaf weevil damaging clover plantings in several areas in the state. Meadow spittlebug eggs are hatching on clover in the Middletown area. A specimen of the spotted asparagus beetle collected on an asparagus spear at Bridgeville.—Donald MacCreary and J. W. Heuberger.

February Super Output Down, Shipments Up

WASHINGTON — Superphosphate production in February totaled 210,516 short tons, down from 219,239 short tons in February, 1957, the Bureau of the Census reports. Shipments, however, amounted to 168,724 short tons, an increase from 158,609 short tons in February a year earlier.

Stocks on hand at the end of last February totaled 410,301 short tons, compared with 419,130 short tons a year earlier. February, 1958, production included 116,763 short tons of normal and enriched, 70,835 short tons of concentrated, 11,798 short tons of ammonium phosphates and 11,120 short tons of other phosphatic fertilizers, including wet-base goods.

SEATTLE CENTER OPENS

SEATTLE—The Viewlands Fuel Garden Center was opened for business here by John Rutherford, manager. The decking of the new store is covered with fiberglas and is equipped with sliding glass doors. Sloping ramps lead to a large selection of bulbs, plants and trees. In addition, the store will handle seeds, insecticides and garden equipment.

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Registration of Pesticides for Tolerances Beset With Problems

By Dr. R. W. Fogleman
Hazelton Laboratories, Inc.
Palo Alto, Cal.

THE purpose of this paper is to examine the background of our food and drug laws, to describe the usual procedures undertaken to establish tolerances of pesticides and to point out areas where real problems lie. Many people of many backgrounds and scientific training are represented in the final results of any petition requesting a tolerance and each individual datum is important to the total petition, much as the individual brick is important in making a strong building. The mortar which holds everything together is logic and understanding.

The discussion will be limited to Section 408 of the Food, Drug and Cosmetics Act or as it is more popularly referred to, Public Law 518, or the "Miller Amendment". The Federal Insecticide, Fungicide and Rodenticide Act, or FIFRA, is also an important part of this discussion, but this law will be referred to only obliquely as it relates to Section 408 of the Food and Drug law.

Our group is in a unique position to evaluate the problems in this field, since we have either written all, or a major portion of the petitions for 21 compounds and have been involved in some phase of almost that many more. These represent approximately one-third of the 159 petitions submitted under this law. It has been possible for us to view the purposes and approaches to specific problems of both industry and government with an unprejudicial attitude and to review critically the actions of the many persons involved. Such criticisms are meant to be constructive and informative, because if an understanding of the problem can be reached by all those concerned, solutions are much more readily found.

The philosophy behind the laws with which we deal is interesting because it represents an advance in our way of life. The conditions which existed 50 years ago were the fundamental reasons for the first steps in government regulations to halt the exposure of the general public to filth, rotten foods and false or misleading claims. The chemicals used in foods then were intended to hide or disguise poor quality and their use was condemned. It soon became apparent, however, that some chemicals were necessary in the production of foods and, therefore, should be allowed, provided certain safeguards and checks were provided.

Among these, the individual consumer must be warned that the chemical is present so that he may select his food and effectively limit his exposure. Safety to the consumer was of paramount importance and efficiency of the compound was definitely secondary. The law, in Section 406, made it mandatory to show that the compound was necessary and could not be eliminated in the production of foods. If this could be proved conclusively, then an attempt was made to reduce the possible risk to the public.

In very recent years, biological techniques and knowledge have been able to evaluate better the bioactivity of these compounds. The metabolic pathways through which a foreign compound is altered and excreted may now be studied. Quantitative measurements of vital processes are now possible. These new tools have been brought to bear on the evaluation of the hazard of exposure to a particular compound, reducing the risk of possible error in determining the limits of safety involved. Thus, the biologist has aided the growth and extension of the philosophy of the Food and Drug law to the level it is today.

Modern technological advancement has created many new chemicals and advertising has created a demand for them. Pesticide chemicals, by stopping the destruction of food by insects and disease provided better quality crops which the general public soon learned to demand. This demand created specific problems which could not be easily controlled.

Thes compounds differed greatly from other food additives in that they were highly active, biologically. The demand for food indicated the necessity of controlling insects and disease. Most important, biological evaluation of limits of safety could now be made with greater certainty than previously possible. The fundamental principles of the law could be fulfilled.

The 150 hearings clearly established the official recognition that the "Toxicity-per se" doctrine in effect for so many years had been superceded by technical knowledge and allowed the compound to be evaluated on its own particular merits. In other words, a compound which in one concentration is toxic to one species may be safe at another concentration to another species. A level may therefore be found which is safe for all members of that particular species.

The 1950 hearings also established the second important fact. This was the official recognition that pesticides were necessary in the production of our food supply. No other class of compounds has been placed in this category.

Under present conditions, the Miller amendment embodies these points and recognizes their solution on the basis of scientific data. Technical questions are answered by technical people by evaluating technical information. If differences in opinion arise, arbitration is conducted by qualified technical experts.

In preparing petitions for submission under Section 408, it is exceedingly important that the technical information be complete and that it be presented in a clear, concise manner. Interpretations must be based upon the data presented in the record.

The format of the petition to be submitted for every compound used as a pesticide under the definition given in the FIFRA, was published in the Federal Register for Feb. 4, 1955. There are seven sections to the petition which represent the major areas of information on which to evaluate the compound in terms of the philosophy of the new law. These sections are:

A. Name, chemical identity, punity and composition of the pesticide chemical.
B. The amount, frequency and time of application of the pesticide chemical.
C. Full reports of investigations made with respect to the safety of the pesticide chemical.
D. Results of tests on the amount of residue remaining, including a description of the analytical method used.
E. Practicable methods for removing residue that exceeds any proposal tolerance.
F. Proposed tolerances for the pesticide chemical, if tolerances are proposed.
G. Reasonable grounds in support of the petition.

Each section is separate in the information required, but is intimately connected with the material in the other sections. Some companies feel they should also be physically connected and bind them so tightly they cannot be taken apart.

Let's look at these sections separately. In Section A, where the chemical identity of the pesticide chemical is discussed, the major fact is chemical proof that the pesticidal compound is known structurally, is reproducible in manufacture, and any impurities present are known.

We have known instances where impurities were of greater biological significance than the pesticidal compound. For example, the mammalian toxicity of Malathion decreased as purity increased. Trace contamination of highly active oxygen analogues of the organic phosphate insecticides increases in vivo, as well as in vitro CHE inhibition remarkably. These facts become important in other sections of the petition.

Stability of the compound in formulations can be very important in terms of shelf-life, effectiveness and even operator and consumer hazard. One of the organic phosphate insecticides was found to decompose on contact with atmospheric water to form a highly potent CHE inhibitor. When formulated properly, the breakdown did not occur. A good deal of data on efficacy and toxicity had to be discarded because the nature of the compound was in doubt.

With the highly volatile or highly unstable compounds such as DDVP and TEPP use conditions and formulations must be watched carefully if the efficacy data can be relied upon.

Section A must form the foundation of the entire petition by defining the pesticidal compound clearly and concisely.

In Section B, a major difference of opinion among members of both industry and government prevails. The point is minor, but bears discussion. Some feel that all the data on effectiveness should be presented here to support the statements on amount, frequency, and time of application of the pesticidal chemical. Others merely list the dosages employed and the usual frequency for effective control.

The ones who present the latter form feel that the FDA has no need for the information, especially since those data are filed with the USDA, which does have authority to give the certificate of usefulness and who must grant registration under the FIFRA Act. They are supported by some in government who indicate this bulk of data is skipped in evaluating this section of the petition. However, it is an important point in the establishment of usefulness for the official record, and is the basis upon which the interpretations of residue data are made. It is a cornerstone of the petition and by all means should be included.

In Section C there are presented all the data from the investigations made in regard to the safety of the pesticidal chemical. I think it significant that the word "safety" was used here, because the purpose of this section is not to define "toxicity," but to define "safety" quantitatively to prove the numerical limits of safety for the compound itself, and in combination with its impurities as defined in Section A of the petition.

Techniques and methods of interpretation vary from one individual or group to another, but the basic concepts remain the same. Many problems arise because, frankly, the biological sciences do not have all the answers yet. The problem of carcinogenicity is a major one for this reason. As an example, almost everyone can define the meaning of a carcinogen, but so far, no one is able to clearly

Walter W. Whitlock

JOINS TEXACO—Walter W. Whitlock has joined Texaco's petrochemical sales division as a sales engineer, according to G. E. Garland, the Texas Co.'s petrochemical sales manager. His headquarters are at the company's regional sales office in the McCormick Bldg., Chicago. Mr. Whitlock will give technical assistance to fertilizer manufacturers and other users of ammonia and nitrogen solutions. Texaco's first ammonia plant has recently been completed at its Lockport, Ill., refinery. Mr. Whitlock was graduated with a B.S. degree in chemistry from Southern Illinois University. Before joining Texaco he was director of research and quality control of the Illinois Farm Supply Co.

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define a cancer. Today we use long-term feeding studies in rats and dogs to give us a partial answer to this important problem of carcinogenicity.

In cases of doubt, the feeding studies are carried out on dogs for periods of up to seven years to provide a statistical basis on which to evaluate this hazard. New methods and new techniques are needed to replace the older "bucket-and-shovel" methods now in use. Tissue culture and cellular metabolism studies offer hope, but much remains to be done to properly evaluate these tools. The costs of seven-year dog feeding studies would go a long way toward paying for the development of better techniques to give more reliable answers in this field.

In Section D the residue data are presented. Of prime importance is the complete description of the analytical method used. Such a description must contain data showing sensitivity, accuracy, and range. On this method hangs the whole petition because if the residue data are discredited, there is no basis of telling if the tolerance is realistic, or if it is safe.

I emphasize this point because we have seen petitions rejected because the analytical method did not pick up all the pesticide. Metabolites which may be equally as hazardous were not found. This is especially true if a chemical method is used for organic phosphates. I strongly suggest that a reliable check of the method be made by either using a bioassay, or by determining a different portion of the molecule. If the results do not agree, a real problem is presented.

Usually the only solution lies in learning all about the breakdown products, rates of formation and decomposition, solubilities, and existence as a residue. If they are present in significant quantities, the biological activity of each must be evaluated in terms of limits of safety.

The residue data are open to wide criticism in my opinion for one simple reason. Residue studies are the afterthought of a good efficacy study. Like most shirt tail relation, the data derived this way are about as equally efficient. We have seen many examples of residue samples with no history of other pesticide treatments, no application date, no harvest date, samples taken by inexperienced people which are obviously not representative.

In one case, a fellow sampled some oranges and then let them roll around the trunk of his car for a day or two. To make matters worse, he had spilled some of the pesticide on the floor. When analyzed, those samples contained over 450 ppm of the compound and were quite upsetting until the truth was found out. I do not think his grant was renewed. There are many more examples in this field that are the result of sheer stupidity on the part of people who should know better.

Properly designed and executed residue studies must be conducted if a rational interpretation is to be made. This represents the limits of exposure of the general public. The evaluation of safety must be pegged to residues to be sure that the public is adequately protected. It is also pegged to the efficacy data, because it defines, to a large extent, the real usefulness of the product to the grower during the last critical days just prior to harvest.

Everyone, company employee, state experiment station man, college professor, and government worker, engaged in residue work must be very much aware of his responsibilities because it involves the company's economic position, the grower's effectiveness in supplying food and, above all, public health.

Section E is probably one of the most overlooked sections in the petition. Here are described methods of removal of excessive residues. We are all guilty of assuming that surface deposits can be readily washed off or brushed off, or trimmed off, but few of us have really tried to find suitable ways of removing these residues. Only in the past year have I become aware of a real need for this information.

Packing houses are vulnerable to seizure under the law for products over tolerance, if they cannot identify the grower. So, the packers realize the truth to the story of the buzz saw —it's hard to tell which tooth bit you. They need to know if their processing methods remove, or just redistribute the residue.

Makers of baby foods spend a lot of money testing their materials, both before and after processing, to determine the presence of pesticides. Growers face the loss of up to half their crop if trimming is the only method of removing excess pesticides. To many of them, it's either half a crop, or none, again defined by residue levels, when insect or disease conditions exist late in the growing season. More work should be done in this direction because there is a real need for it.

Section F is the culmination of all the efforts, because here the numerical tolerances are spelled out for each crop. Usually, it is a brief statement proposing the establishment of the tolerances under the law.

Section G is felt by some to be the place where you can put in anything, since it isn't read anyway. Actually, if the petition is well presented, there is very little need for this section. We, however, feel that this is the place for summing up, showing the lines of reasoning we have used, making it clear to an outsider, so that he may follow and arrive at the same conclusions we have. There are times when such a clear discussion could be exceedingly important.

As was pointed out earlier, many policies of the regulatory agency were established under situations far different from those that exist today. The government must consider all people when making decisions and, therefore, are wide open to criticism from many sides on each and every stand they make. They are literally damned if they do and damned if they don't. In many cases, they would welcome the outside opinions of recognized scientists in meeting the challenge of interpreting new technology in terms of public safety.

With industry remains the ultimate decision. Their case, however, can be no better than the petition they submit, presenting all the data, and a complete and logical interpretation of those data in terms of efficacy, safety, and public health.

In general, the problems of clearing a pesticide chemical touch many points of the law. For example, are nematocides, compounds which destroy snails, slugs and earthworms, plant defoliants and plant hormones sufficiently important and necessary to warrant inclusion in the class of

(Turn to REGISTRATION, page 19)

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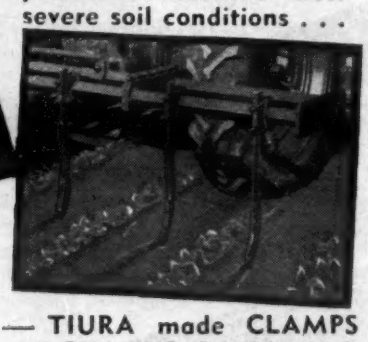

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Central States Entomologists to Meet

STILLWATER, OKLA.—Entomologists from a dozen states will attend the annual meeting of the Central States Entomological Society, to be held May 10, in the Oklahoma State University Student Union. Expected attendance is 100 to 125, says Dr. D. E. Howell, head of the OSU entomology department. Prof. Kenneth Arbuthnot of the department is president of the organization and will preside.

Takes Over 4 Firms

SIKESTON, MO.—Joel A. Montgomery has taken over the operation of four companies in this area: Bell City (Mo.) Grain & Milling Co.; Vanduser (Mo.) Grain Co.; Diehlstadt (Mo.) Grain Co., and the Olive Branch (Ill.) Grain Co. They will be under the general management of T. E. Thompson. The business activities will consist of buying and selling grain, seed, fertilizers and farm chemicals, and the processing of dehydrated alfalfa meal.

GROUPS TO COMBINE

PORTLAND, ORE.—A joint meeting of representative Willamette Valley filbert growers with Northwest Berry Assn. directors will be held soon in a move aimed at combining the two organizations, George Benshoof, Damascus, Ore., temporary chairman of the filbert growers group, reported following a meeting of representatives of the two organizations.

TRANSPORTATION

(Continued from page 1)

which would be made subject to regulation."

In this particular item it is not believed that the Senate is moving as drastically to limit the application of the motor truck haul exemption of agricultural commodities from ICC regulation as has been indicated by the attitude of the House Interstate Commerce Committee in hearing held here recently.

On the House side a pending bill would limit the application of the truck haul exemption to apply only to such time as the agricultural commodity is in the possession and title of the farm producer. Once title to a commodity has passed from the farmer the exemption would cease.

The Senate sub-committee has acted ahead of its House counterpart in regard to private cartage which has been the object of criticism by the ICC. That agency has described many private carriage operations as illegal carriage. Such so-called carriage has consisted of use of bill of sale of invoices whereby a privately owned motor vehicle transports, usually in backhaul movement, goods or merchandise exempt from ICC regulation and from the transportation excise tax. ICC says it finds this condition to be discriminatory and disruptive of freight movement to the detriment of the regulated carriers, both rail and motor.

This Senate group also recommended to other appropriate committees of Congress to consider repeal of the existing excise taxes on freight and passenger transportation.

Unanimous sub-committee action on this report seems certain to provoke similar action by the full Senate committee and floor action at this session.

In the instance of the excise tax repeal recommendation this committee does not have jurisdiction on this item and its reference to other committee attention would ultimately require approval and action by the House Ways and Means Committee.

WESTERN WATER

(Continued from page 1)

ico, Oklahoma, Oregon, South Dakota, Texas, Utah, Washington and Wyoming.

Although reservoir levels were being held down to take care of heavy runoff expected in some places, no unusually excessive streamflow threats were reflected in the report. Water supplies were expected to be "good to excellent," however, for almost all irrigated areas in the western states.

Heavy March-April storms were credited with adding to a near-record snowpack in a large area of California and the Southwest. The California State Department of Water Resources forecasts ranged from 150 to 180% of normal for Central Valley streamflow; and expected seasonal streamflow of 125 to 150% of normal was cited as typical for Nevada, southern Utah, Arizona—especially short of water in recent years—and southwestern Colorado. Although the Arizona outlook is the best since 1952, the report said pumping of groundwater will not be relieved.

In the Pacific Northwest, the water supply outlook is generally good. Barring extreme deviations from normal in precipitation or late spring snow melt, there should be adequate water supplies in the Columbia Basin and northern Rocky Mountains where winter snowfall was near average. For the West generally, the report noted that precipitation had exceeded normal for the past 10 months.

The water supply for the Rio Grande through Colorado, New Mexico and Texas is expected to be "reasonably adequate" for the first time since 1949, with near-normal streamflow and with reservoir storage well above average in Colorado and near average in New Mexico.

ARAMITE

(Continued from page 1)

made a similar proposal, the position of Naugatuck Chemical was upheld by an advisory committee of nationally-known medical experts, pathologists and entomologists. After reviewing toxicity data, they recommended and FDA granted a tolerance of one part per million for Aramite.

"Therefore, Naugatuck Chemical will once more adopt the procedure provided in the Miller Amendment to the Food, Drug and Cosmetic Act, and request that the new FDA proposal be reviewed by an advisory scientific committee.

"Based on test data obtained over a period of eight years and costing more than half-a-million dollars, we believe that:

"1. Aramite will not cause tumors in rats or dogs at the dosages now being used on food crops.

"2. That dietatary levels of Aramite hundreds of times greater than those found in treated crops must be fed daily over a prolonged period of time to produce liver tumors in these animals.

"3. That the type of hepatoma, or liver tumor, caused by Aramite in these animals is not equivalent to the liver tumor which is observed rarely in man.

"4. That the data supports the use of the chemical under the present tolerance of one part per million and that, under these conditions, it is safe for humans."

NEW SUPPLY STORE

RIDDLE, ORE. — The A-D Feed Store has opened for business here and operators of the facility offer a wide selection of poultry and stock feeds, garden supplies, seeds, fertilizers and insecticides. Al Buhl, Myrtle Creek, Ore., has been named manager.

Special Merchandising Section

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Marketing News and Features

SHOP TALK

OVER THE COUNTER

By Emmet J. Hoffman
Croplife Marketing Editor

One of the most complete farm stores in Arizona is probably the one belonging to the Southwest Flour & Feed Co. at Glendale, an agricultural suburb of Phoenix. The main company, managed by D. H. Bansall, Sr., has been in existence since about 1875. The farm store is much newer, although it has been in operation nearly 30 years.

The store is managed by Warren Sproul, who had formerly spent several years with the farm store service division of a national milling company. He was well-trained in farm store management when he joined the Arizona firm about 12 years ago.

Under his management the store has expanded until there are six regular employees besides the bookkeepers. An average of 800 to 1,000 customers trade there every week, with some of them coming as far as 150 miles away.

"One reason for this," says Mr. Sproul, "is because the farmer or rancher can find anything he needs. We carry a complete line of fertilizer, insecticides, herbicides, animal health remedies and other chemicals. We also stock a complete line of poultry, sheep and livestock supplies. We have a lot of hard-to-get items which are sold nowhere else."

The occasional-purchase item serves a good purpose. It brings people to the store, where they buy other products. Many regular customers first came into the store seeking some item they couldn't find elsewhere.

The store sells a large volume of fertilizer in large sacks and in small packages. There is also a good sale of insecticides, because here in the Valley of the Sun where frost seldom visits, the insects thrive the year around. The store not only sells farm chemicals to farmers, but also has a large town trade.

In the hot desert country home owners hastily cover the burning sands with trees, shrubs and grass. Vegetation in the irrigated valley is green and lush, and the sale of agricultural chemicals is quite large.

In managing a store of this type, Mr. Sproul has learned that a staff of experts is essential. One customer out of every three, it seems, is seeking information along with the purchase. The employees are asked about everything from poultry diseases to pruning trees.

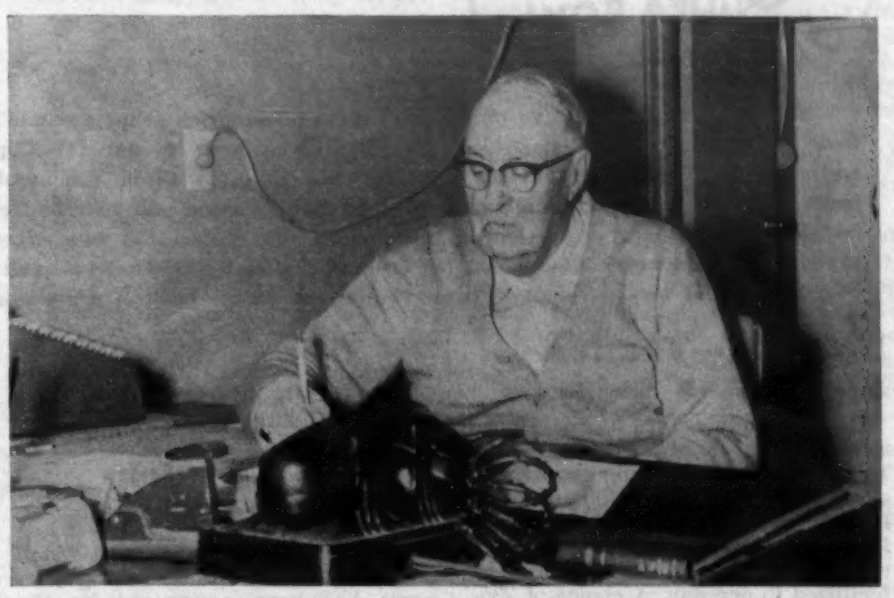
Mr. Sproul is a nutritionist and usually takes care of the feeding problems. Quite often during the day he may be found at his desk helping some customer with a livestock or poultry ration.

The store also has experts on plants and insects, and part of their time is used in giving service to the customers. Occasionally the problem will call for a visit to the farm or home where a spot check is made.

Another thing Mr. Sproul stresses is a clean, well-arranged store. With

(Turn to OVER THE COUNTER, page 12)

1,000 ITEMS—The farm supply store with 1,000 items is the slogan adopted by the Southwest Flour & Feed Co. outlet at Glendale, Ariz. A unique feature of the store is this warehouse display room adjacent to the main store. Two employees are shown making a delivery. The room provides storage space as well as open displays to encourage impulse buying.



BUSINESS BUILDER—An "apostle of good farming methods" is a phrase which could well describe Walter Craft, fertilizer dealer of Malaga, N.M. A veteran businessman, Mr. Craft has for many years led an educational program to prove to farmers the benefits of proper fertilization and insect control. Last year's sales of 3,200 tons of dry fertilizer indicate that his program is paying him rewards.

Rewards Worthwhile

New Mexico Fertilizer Dealer Champions "Good Farming" Plan

By Jess Blair
Croplife Special Writer

Although he is now known as one of the biggest fertilizer dealers in the area, there was a time when Walter Craft of Malaga, N.M., couldn't give a sack of it away. This was back in the early 1930's when he first saw the need of increasing cotton yields.

Finally in 1933 he persuaded a local farmer to apply fertilizer. The man made 900 lb. more seed cotton per acre than on the untreated land, and has used it ever since. This test received favorable comment, but it was not until a few years ago that real progress was made.

Since then sales have gradually increased, until 1957 when the Walter Craft Fertilizer Co. sold 3,200 tons of dry fertilizer to farmers in the Pecos River Valley. He also sold a large amount of insecticides to fight the cotton pests and alfalfa aphids.

Mr. Craft has been an apostle of good farming methods for the 50 years he has been in the gin business. As production costs rose, he pointed out to farmers that the only way to maintain their profit margins was to raise more cotton per acre. This was sound advice, because from an average of less than a bale per acre a few years ago, cotton producers have increased yields to two bales an acre. A few who fertilized heavily and followed good management practices have harvested as much as three to four bales per acre.

Selling fertilizer in this area is not an easy task. The valley has several peculiar problems not found elsewhere. First, the soils have a pH from 8.0 to 8.5, which precludes the usage of certain fertilizers. He urges farmers to use ammonium sulphate to get their nitrogen.

Also the salty river water intensifies soil problems. Unless the farmer knows how to cope with this problem, he may find himself in financial trouble. By making a study of fertilizers, Mr. Craft knows what kinds bring the greatest returns and also knows what not to use.

Another thing a dealer must know in this area is the various soil types. Having been in the valley for 50 years, he has made a careful study of the various fields, and knows most of them as well as a city gardener knows his backyard. He has continually relied on soil tests for his fertilizer recommendations.

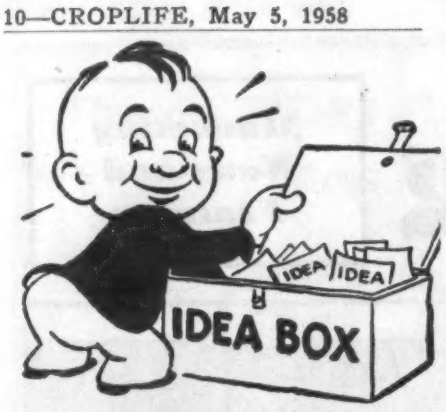
"Recommending fertilizer when nothing is known of the soil is a foolish undertaking," he says. "You want that farmer to make more cotton, and if he uses the wrong kind, he certainly won't be buying any the next season."

Among the most successful fertilizers in the area are triple phosphate

(Turn to N. M. DEALER, page 14)

WALTER CRAFT HONORED

MALAGA, N.M.—Walter Craft, insecticide and fertilizer dealer and cotton merchant here, has been named New Mexico "Cotton Ginner of the Year." During the last 37 years he has been manager of various gins in the Southwest and now owns his own plant here. In addition to running his own plant, Mr. Craft buys and sells cotton and distributes insecticides and fertilizers from two warehouses in the Carlsbad Irrigation District. He has served two terms as vice president of the National Cotton Ginners Assn., and for several years has been advisory director of the Texas Cotton Ginners Assn. He helped to spearhead the formation of the New Mexico Cotton Ginners Assn. and is presently serving on the board of directors of that organization. Mr. Craft also is active in Eddy County civic affairs.



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No. 6727—Trailer Applicator

General Metals, Inc., has developed a new trailer applicator, the model TPD-200, for top-dressing of nitrogen solutions or complete liquid fertilizers. The unit is said to be ideal for fertilizing pastures, small grain and row crops, and up to 200 acres may be fertilized in one day. A choice of 235-gal. pressure or 210-gal. non-pressure tank of aluminum, steel or stainless steel is provided. The standard 21-ft. boom is made in three sections. There are 24 nozzles. Literature may be secured by checking No. 6727 on the coupon and mailing it to Croplife. Please print or type name and address.

No. 6731—Liquid Container Closure

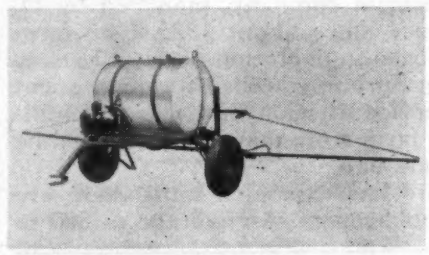
The Rieke Metal Products Corp. announces its new "self-venting Flex-Spout" closure for liquid shipments. The unit incorporates an internal vent feature that obviates the necessity for other separate vents or closures on steel or fiber shipping containers. The closure is a completely assembled unit that requires no positioning or registration when affixed to the container. The spout is of polyethylene, it can be extended or recessed and is claimed to eliminate the "glug" in pouring. Check No. 6731 on the coupon and mail it to Croplife to secure details. Please print or type name and address.

No. 6734—Mulch-Laying Machine

A new machine for laying black polyethylene film for mulching purposes has been announced by the Bakelite Co., Division of Union Carbide Corp. The machine lays film at a speed of about one acre per hour. In a 1957 experiment with cantaloupes, film cost was $160 per acre and melon yields were increased nearly three times compared with the check plot. The mulch is laid prior to planting. Existing farm implements may be utilized in rigging up the machine. Secure details by checking No. 6734 on the coupon and mailing it to Croplife. Please print or type name and address.

No. 6724—Rubber-Lined Tanks

The Gates Rubber Co. has prepared a new folder describing its "50-H rubber-lined tanks" and listing tank specifications for both pressure and non-pressure fertilizer chemicals. The literature states that Gates tanks "give permanent corrosion protection for all fertilizer solutions." The tanks



have a 3/16-in. rubber lining "welded" to the steel surface, states the folder. Check No. 6724 on the coupon and mail it to secure details. Please print or type name and address.

No. 6729—Plant Tranquilizer

A chemical tranquilizer for plants has been developed by United States Rubber Co. It will be marketed for use on selected crops for the first time this season. Called by the trade name, "Duraset-20W," the product is said to increase plant yields by reducing the effects of shock and stress caused by such conditions as heat spells and sudden cold snaps. Successful field tests have been performed by using the product on tomatoes, cotton, cherry trees, alfalfa, soybeans and other fruits and vegetables. Check No. 6729 on the coupon and mail it to secure details.

Also Available

The following items have appeared in the What's New section of recent issues of Croplife. They are reprinted to help keep retail dealers on the regional circulation plan informed of new industry products, literature and services.

No. 6728—Apple Insect Control

Acceptance of a "Crag Sevin" experimental label for control of apple insects has been granted by the U.S. Department of Agriculture, it was announced by Crag Agricultural Chemicals Department, Union Carbide Chemicals Co., Division of Union Carbide Corp. The product will be available only in limited quantities this year. The new label recommends use of "Sevin" 50% wettable powder at the rate of one or 2 lb. per 100 gal. of dilute spray. Check No. 6728 on the coupon and mail it to secure details. Please print or type name and address.

No. 6726—Pre-Emergence Weed Killer

"Alanap" is the trade name for a pre-emergence liquid weed killer for soybeans, vine crops, peanuts, asparagus and cotton. Manufacturer of the product is United States Rubber Co., Naugatuck Chemical Division. New literature describing features of "Alanap" is available without charge. Check No. 6726 on the coupon and mail it to Croplife. Please print name and address.

No. 6723—Fertilizer, Lime Pamphlets

Three pamphlets designed to help farmers realize higher yields per acre are available free from Monsanto Chemical Company's Inorganic Chemicals Division. Two of the pamphlets are devoted to the correct fertilization of corn and cotton, respectively; the third points out the advantages of applying lime to fields in order to increase crop yields and help fertilizers do their most efficient work. Check No. 6723 on the coupon and mail it to Croplife to secure details. Please print or type name and address.

No. 6730—Herbicide Ingredient

Volume production of methylacetylene-propadiene, a chemical intermediate, has been started by the Dow Chemical Co. Fields in which the chemical may find use include agricultural herbicides. Check No. 6730 on the coupon and mail it to secure details. Please print or type name and address.

No. 6719—Weed Control Guide

"Chemical Weed Control Guide," an annual publication, has been prepared for 1958 by the Soil Building Division, Cooperative G.L.F. Exchange, Inc. The 76-page guide lists weed control information for the dairyman, vegetable grower, fruit grower, diversified farmer and instructions in the use of weed killers and equipment. Check No. 6719 on the coupon and mail it to Croplife. Please print name and address.

No. 6735—Insecticide-Fertilizer Brochure

A colorful, 8-page brochure has been published by the Velsicol Chemical Corp. to describe methods of applying fertilizer mixed with Heptachlor insecticide. Broadcasting, banding in the row, side dressing, liquid application, double banding, and drilling with seed are discussed. Action photos and two-color drawings accompany the text. The brochure is educational in nature and can be used as an aid to farmers and in classroom work. A copy of the brochure may be obtained by checking No. 6735 on the coupon and mailing it to Croplife. Please print or type name and address.

No. 6733—Soil Fungicides

Advice on use and benefits of soil fungicides are offered in three new pieces of literature issued by the Insecticides Products Department of the Olin Mathieson Chemical Corporation. Two of the six-page folders, in color, describe the use of Terraclor, a successfully tested fungicide, on vegetables and crucifers. The third is a technical application bulletin for the treatment of damping-off or "soreshin" on cotton. Copies of the pamphlets may be obtained by checking No. 6733 on the coupon and mailing it to Croplife. Please print or type name and address.

No. 6712—Diazonon Data

Information about the use of the product, "Diazonon," in fruit and vegetable insect control is outlined in new literature. Secure the data by checking No. 6712 on the coupon and mail it to Croplife. Please print or type name and address.

No. 6718—Spray Gun

Features of the new Spraying Systems Company's "GunJet No. 22" have been announced. Its main advantage, according to the company, is that only a few parts of the gun actually come in contact with the chemical sprayed. The gun is designed for

Send me information on the items marked:

- ☐ No. 6710—Spreader-Sticker
- ☐ No. 6712—Diazonon Data
- ☐ No. 6713—Idea Book
- ☐ No. 6714—Trithion Data
- ☐ No. 6715—Product Booklet
- ☐ No. 6717—Wetting Agent
- ☐ No. 6718—Spray Gun
- ☐ No. 6719—Weed Guide
- ☐ No. 6722—Time-Lapse Film
- ☐ No. 6723—Pamphlets
- ☐ No. 6724—Tanks
- ☐ No. 6726—Weed Killer
- ☐ No. 6727—Applicator
- ☐ No. 6728—Apple Insects
- ☐ No. 6729—Plant Tranquilizer
- ☐ No. 6730—Ingredients
- ☐ No. 6731—Container Closure
- ☐ No. 6732—Weed Killer
- ☐ No. 6733—Fungicides
- ☐ No. 6734—Mulch-Layer
- ☐ No. 6735—Brochure
- ☐ No. 6736—Crabgrass Product

(PLEASE PRINT OR TYPE)

NAME .....

COMPANY .....

ADDRESS .....

CLIP OUT—FOLD OVER ON THIS LINE—FASTEN (STAPLE, TAPE, GLUE)—MAIL

FIRST CLASS
PERMIT No. 2
(Sec. 34.9, P. L. & R.)
MINNEAPOLIS, MINN.

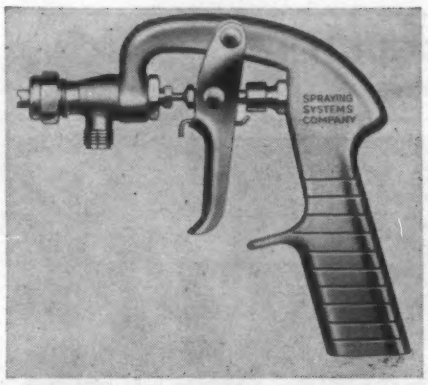
BUSINESS REPLY ENVELOPE
No postage stamp necessary if mailed in the United States

POSTAGE WILL BE PAID BY—

Croplife

P. O. Box 67

Reader Service Dept. Minneapolis 1, Minn.



pressures up to 800 p.s.i. A wide choice of capacities is available. Check No. 6718 on the coupon and mail it to Croplife. Please print or type name and address.

No. 6714—Trithion Data

Trithion, Stauffer Chemical Company's new organic phosphate insecticide, is described in a brochure just published. The important characteristics of the insecticides, as revealed by laboratory and field tests during the past several years, are detailed. Company officials state: "Trithion is a non-systemic, long-residual compound which is an efficient miticide. It kills both adult mites and their eggs. One or two applications often suffice for a whole season. Trithion is also effective over a broad range of insects, having demonstrated outstanding control of 77 pests on 32 crops." Secure the data by checking No. 6714 on the coupon and mailing it to this publication. Please print or type name and address.

No. 6713—Garden Center Idea Book

A new garden center "Idea Book" has been published by the California Spray-Chemical Corp. The 32-page publication includes sales ideas and illustrates methods of operation for the industry. The book is not for general distribution but can be used for a short time on a library-type loan basis. Check No. 6713 on the coupon and mail it to secure details. Please print or type name and address.

No. 6717—Wetting Agent

"Sole-Terge S-2-S" is an anion-active wetter-penetrant recently announced by the Sole Chemical Corp. The product exhibits "unusual wetting action in the presence of high percentages of acids, alkalis and various electrotypes," it is claimed. It has application in the pesticide processing and other industries. Technical literature is available. Check No. 6717 on the coupon and mail it to Croplife. Please print or type name and address.

No. 6722—Time-Lapse Film

A kernel of corn sprouts and grows to a full-sized stalk in a matter of minutes in an educational color motion picture recently released to show the value of nitrogen for good plant growth. The film can be booked in the Midwest through the Nitrogen Products Department of the Standard Oil Co. The film was produced by Standard Oil Co. (Indiana) and filmed by John Ott, Winnetka, Ill., a specialist in time-lapse photography. The 25-min. non-commercial film, with sound narration, is called "Nature's Need for Nitrogen." It is available to farm and agricultural organizations and other interested groups. Check No. 6722 on the coupon and mail it to Croplife.

No. 6736—Crabgrass Product

Chlordane, an established lawn and garden insecticide, is effective as a crabgrass killer, according to the Velsicol Chemical Corp. One Chlordane application in the early spring, before crabgrass seed germinates, will rid a lawn of crabgrass for the season, and provide several seasons of insect control, it is claimed. Chlordane, it was determined from experiments, kills the first true leaf of the crabgrass plant, as it emerges from the seed. A hose attachment, sprinkling can or sprayer can be used for application. Check No. 6736 on the coupon and mail it to Croplife. Please print or type name and address.

No. 6732—Endothal Weed Killer

A new bulletin (No. W-11) has been prepared by Pennsalt of Washington Division, Pennsalt Chemicals Corp., on its product trade-named, "Penco Endothal weed killer" for sugar beets. The product is effective only when applied as a pre-emergent spray; troublesome weeds can be controlled by spraying seedbeds with this water-base formulation containing 2 lb. of disodium Endothal per gallon, according to company officials. Secure details by checking No. 6732 on the coupon and mailing it to Croplife.

No. 6710—Spreader-Sticker

A statement that "Glyodin can be used as a spreader-sticker" has been accepted by the U.S. Department of Agriculture for addition to the fruit fungicide's commercial label, according to Union Carbide Chemicals Co., Division of Union Carbide Corp. Glyodin is a control product for fruit diseases such as apple scab, sooty blotch, Brooks spot, peach brown rot, and cherry leaf spot. Check No. 6710 on the coupon and mail it to secure details. Please print or type name and address.

No. 6715—Product Booklet

A new booklet entitled, "Products of Atlas," has been produced by the Atlas Powder Co. The booklet describes briefly the company's major product lines, some of which have application in agricultural chemicals. The booklet may be secured by checking No. 6715 on the coupon.

Farm Supply Store Sales Show Decline

SACRAMENTO—Figures released by the California State Board of Equalization show that taxable sales by farm implement dealers and farm and garden supply stores fell during the last quarter of 1957 from the same period in 1956.

Sales by farm implement dealers dipped 10.9% while sales by farm and garden supply stores dropped 4.2% over the fourth quarter of 1956. Sales by farm implement dealers amounted to $38,020,000 which was .71% of all taxable transactions. Farm and garden supply stores sold $20,928,000 worth of merchandise accounting for .39% of transactions.

Figures also showed that the 1957 fourth quarter sales for these retailers dipped from highs achieved in the three previous quarters. Total sales by farm implement dealers for the year totaled $168,387,000 while farm and garden suppliers sold a total of $104,490,000.

it's just off the press..!

Croplife's second edition of

BUG OF THE WEEK

a dealer's manual of insect pests

Here it is! The second edition of Croplife's Bug of the Week in 8½ x 11" booklet form. It's made up from reprints of the series appearing in Croplife during the past several months. The booklet includes 32 insect pests pictured and described—and all are in addition to the 21 which appeared in the original Bug of the Week booklet issued in 1954.

ORDER FOR YOURSELF, YOUR CUSTOMERS

You'll find many uses for this interesting, factual booklet. It's ideal for use by salesmen, dealers—and their customers.

Clad in an attractive cover, the booklet is packed with accurate information about these insects:

- European Corn Borer
- Khapra Beetle
- Red Flour Beetle
- Onion Thrips
- Pepper Weevil
- Rapid Plant Bug
- Rose Chafer
- Two-Spotted Mite
- Cabbage Aphid
- Rose Leaf Beetle
- Potato Leafhopper
- Cotton Fleahopper
- Alfalfa Caterpillar
- Cowpea Curculio
- Corn Rootworm
- House Fly
- Spotted Cucumber Beetle
- Stink Bug
- Yellow-Striped Armyworm
- Blow-Fly
- White-Fringed Beetle
- Confused Flour Beetle
- Corn Earworm
- Leafhopper
- Gypsy Moth
- Mexican Bean Beetle
- Strawberry Weevil
- Harlequin Bug
- Spotted Alfalfa Aphid
- Spider Mite
- Cadelle Beetle
- Sweet Potato Weevil

SINGLE COPY PRICE: 50 CENTS

Reduced rates quoted on quantity orders.

IMPRINT YOUR FIRM NAME

The back cover has been left blank so it can be utilized by dealers and others for promotional purposes. Company name or your advertising message can be imprinted, making the booklet a valuable sales piece. Rates for imprinting on request. Give full details.

FIRST EDITION AVAILABLE

A limited quantity of the First Edition is still available at 25c a copy. It features 21 insect pests.

clip coupon below

Fill in coupon below and mail with remittance to: Reprint Department, Croplife, Box 67, Minneapolis 1, Minn.

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Address .....

City ..... Zone ..... State .....

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- ☐ Pesticide Formulator
- ☐ Fertilizer Mixer
- ☐ Dealer

If interested in purchasing supply with your imprint, please write copy for back page, and indicate number you would want. Price will be submitted by return mail. Copy for imprint (use separate sheet if necessary): .....

.....

Quantity desired: .....

What's Been Happening?

This column, a review of news reported in Croplife in recent weeks, is designed to keep retail dealers on the regional circulation plan up to date on industry happenings.

Contracts were let to two chemical companies—Wasatch Chemical Co. and Sinclair Refining Co.—to supply pesticides to battle a bark beetle epidemic which is destroying trees on the Utah-Wyoming border.

The U.S. 1958 gypsy moth control program will include spraying of all known infestations, the U.S. Department of Agriculture announced.

The first commercial plant to produce Trithion, the new insecticide-miticide developed by the Stauffer Chemical Co., has been completed at Henderson, Nevada.

Nitrogen Division, Allied Chemical & Dye Corp., is installing two large-volume nitrogen solution storage terminals in Florida.

Two campaigns against the Great Basin tent caterpillar are to be launched in Colorado, New Mexico and Arizona by government insect experts. They plan to spray the caterpillars from planes with poison and a killer virus.

A strong emphasis on the economics of range fertilization featured the sixth annual California Fertilizer Conference held at San Luis Obispo. In one demonstration it was shown that heifers grazing on fertilized ranges gained far more weight than did the animals on the check plot.

A survey of farm chemical dealers in West Texas and parts of New Mexico revealed that spring sales of fertilizer were down because of wet weather and lack of financing.

The U.S. Department of Agriculture announced an "advance" minimum average support price of $1.36 a bu. for corn for the 1958 crop season. The price was arrived at in accordance with "forward pricing" provisions of the law.

Legislation was being considered in Congress which would result in banning use of trucks transporting fertilizer materials to farms and making return loads of a farm commodity if the commodity had been previously sold to a broker, shipping point distributor, or a terminal market receiver. The bill, HR. 5823 was introduced at the request of the Interstate Commerce Commission.

Price supports on peanuts for 1958 were set by USDA at $213.20 ton. This price was announced as being 82% of the April parity price of $260.

Nitrogen Division, Allied Chemical & Dye Corp., reorganized its development department at Hopewell, Va. F. O. Agel, vice president, is in charge of development activities for the division.

The need for additional applications of phosphate and potash in the state of Washington was determined by a state-wide series of soil tests. A typical 60-acre dairy farm should be investing $1,000 a year in fertilizer, one speaker said.

That poor application techniques are often responsible for adverse legislation against the use of herbicides, was the theme of an article by Thomas J. McMahon, of McMahon Bros. Co., Binghamton, N.Y. He said that in areas where herbicides were applied correctly, the results were looked upon with favor by the population.

Despite wet weather in much of the nation and the fact that smaller acreages are predicted for crops in 1958, fertilizer industry spokesmen in April said that they expected to have a good season this year.

The Interstate Commerce Commission chairman, Howard G. Freas, came out against the transportation excise tax on freight, originally placed on shipments as a wartime plan. He said it is now an outright revenue measure.

A forest fertilization research program for California was proposed at the recent forest soils fertilization conference held at Sonora, Cal. The conference was under the auspices of the National Plant Food Institute and the California Fertilizer Assn.

The high economic cost of weeds was cited at the recent Western Weed Conference held at Spokane, Wash. A savings of $130,000,000 has been realized due to weed control methods developed in the past 15 years, the conference was told. This figure is for the 11 western states.

J. W. Apple, University of Wisconsin entomologist, was named president-elect of the North Central Branch of the Entomological Society of America at the group's recent St. Louis meeting.

The addition of facilities costing nearly $1,500,000 enables the Bartow, Fla., triple superphosphate plant of the Davison Chemical Co., Division of W. R. Grace & Co., to produce run-of-pile triple superphosphate, a powder form, as an addition to the granulated material previously produced.

Indications are that the 1958 acreage of crops planted or grown may total about 333 million acres, according to the Crop Reporting Board. If realized, this would be one million acres under the 1957 low level of plantings and would be the smallest national crop planting since 1917.

Stockholders are being asked to approve a change in name of the Allied Chemical & Dye Corp. to Allied Chemical Corp., effective May 1.

The North Central Branch Entomological Society of America, meeting in St. Louis, discussed control of insect pests of forest and shade trees, cereal and forage crops, truck crops and fruit. Some 300 persons attended the three-day meeting.

OVER THE COUNTER

(Continued from page 9)

a thousand different items for sale, the products might become a jumble of unrelated merchandise. Instead everything is placed in neat wall and island displays so that customers can usually find what they want. Quite often a dozen people will be serving themselves, which reduces the load of the employees.

Stock Room Display Proves Successful

One innovation planned by Mr. Sproul is a display of items back in the stock room. In this large room where bulk feed and fertilizer are stored, there is a driveway so that customers can drive their trucks and pick-ups inside.

On either side of this short driveway, there are several displays of the same items to be found inside. A rack of garden tools, almost every kind of farm chemical sold, and many kinds of supplies are kept in plain view. He also has a 10¢ table loaded with small packages of insecticides, and such things as gopher killers, plant food and other items a customer may buy only when he sees them.

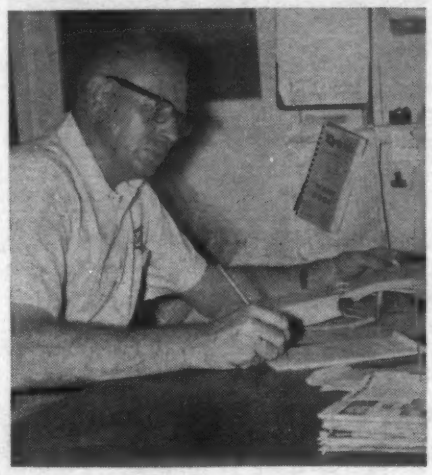
Since the store began using these displays, the impulse buying has steadily increased. There is also a large sign which tells the customers about the retail store just beyond the open door.

The store is a part of the main flour and feed company, but Mr. Sproul has much leeway in running this part of the business. He is in complete agreement with the company owners on advertising, and has made a study of the most effective kinds.

"We use newspapers, radio and TV," he said, "and get good results from all. The most effective, according to tests we made, are the spot announcements that follow the noon weather report."

He has often listed specials on the programs and then made a survey of the results. One example was the sale of 200 rope halters in just a few days. Another business increase has been in the sale of weed killers, much of which can be attributed to advertising.

Mr. Sproul believes that a farm store properly managed and based on service to the customers can be operated at a handsome profit.



Warren Sproul
. . . well-trained in management

"A hole-in-the wall won't do it, though," he said. "You've got to manage it like a big business and keep what the people need. Why, some of these items won't be sold for six months, but they will all sell eventually.

"Too many store owners start cutting down on their stock when business is slow. They have less to sell and consequently they sell less. Here we know there is a market for everything we handle, and as farming becomes more technical new products are coming on the market every month. I've found that a lot of small sales can equal a big volume. And one thing about stocking a wide variety of such merchandise, a lot of them are long-profit items."

Mr. Sproul's theories have paid off. His place is more than just a farm store. It is a farm department store, equal in size and sales volume to many department stores in the larger cities.

OREGON ACREAGES REPORTED

PORTLAND, ORE.—The 1958 acreage of sweet corn expected to be planted for processing in Oregon is 14,800 acres—4% less than last year but 6% above average, according to the Crop and Livestock Reporting Service. The 11,200 acres expected to be planted to snap beans in Oregon this year is 4% above last year and 47% above average. The prospective 1,100 acres of late summer watermelons for harvest in 1958 in Oregon is 10% larger than last year's harvested acreage.

DEDICATION—Wilson & Geo. Meyer & Co., 108-year-old western distributor of agricultural and industrial chemicals, plastics, coke, peat moss and other products, has officially dedicated its new enlarged Southern California offices, warehouse and bulk storage facilities. The new plant, located at 2060 South Garfield Blvd., Los Angeles, was erected at a cost of about $500,000. It doubles the firm's former Southern California facilities. Taking part in the dedication activities were, left to right: Jeffery W. Meyer, vice president, San Francisco; T. W. Harris, vice president and manager, southwestern division; John Hooper, manager, agricultural sales, southwestern division; and Wilson Meyer, president, San Francisco.

FARM SERVICE DATA

Extension Station Reports

Scientists are rolling out poisoned "welcome mats" for termites. The mats are placed beneath houses. And they're made of asphalt.

Walter Ebeling and Robert E. Wagner, entomologists at the University of California, Los Angeles, make the mats by stirring insecticides into asphalt, then spraying a thin layer of the mixture over earth where either slab-on-ground or conventional concrete foundations are to be laid.

Besides barring termites, the layer provides a vapor barrier that prevents damage to flooring from moisture rising out of the ground.

The entomologists will keep statistics on the 100 houses to be treated, comparing termite incidence over the next 15 to 20 years with that of nearby, untreated houses.

★

An insect is responsible for spreading yellow leaf roll disease in central California's canning peach orchards, reports an entomologist at the University of California.

Recent investigations show that a species of leafhopper identified only by its technical name, Fieberiella florii, transmits the virus responsible for the sporadic but killing outbreaks of yellow leaf roll disease (a strain of western X-disease).

Another leafhopper species, Colladonus geminatus, was formerly considered the principal carrier but now appears to play a secondary role in the Yuba City-Marysville area.

Laboratory tests conducted by entomologist D. D. Jensen of the Berkeley staff showed that the leafhopper Fieberiella florii is capable of transmitting the yellow leaf roll virus from tree to tree. During localized outbreaks near Yuba City in 1955 and 1956, this leafhopper was found in the affected areas but was absent from surrounding orchards.

According to Mr. Jensen, new cases of the disease were found each year grouped near trees that had been infected the year before.

Careful inspection of records shows that such "hot spots" have occurred more than once in the area during the past years, he said.

"These localized foci of disease and insect carriers permit application of an intensive insect control program in specific orchards with a good prospect for suppressing the disease."

In addition to the insect control measures, a state-supervised program for removal of diseased peach trees is already underway.

★

Correct attention to details can save dollars for the farmer when it comes to fumigating vegetable land for nematode control.

Dry or cloddy soil, or soil with old roots and too much organic matter, can cause failure of expensive fumigation, warns Ivan J. Thomason, assistant nematologist in the University of California's Citrus Experiment Station, Riverside.

He recommends these steps to insure success:

1. Incorporate cover crops well before fumigating. Plow or disk the cover crop deep and leave plenty of moisture in the soil. This will stimulate rapid decomposition of organic matter. You can't effectively fumigate soils that are dry and cloddy or filled with organic material.

2. Apply the fumigant at least six to eight inches deep, with shanks one foot apart. Seal the ground afterward by using a drag or harrow behind the injector. A cultipacker or similar tool will do a good job of sealing the soil surface.

3. Do not sacrifice proper placement and sealing, in applying fumigants, for the sake of speed.

4. Be sure that crop residue, such as old potatoes, sweet potatoes, or infected roots, has not remained in the soil at fumigation time. Egg masses of nematodes embedded in these materials cannot be reached by the fumigant.

5. Match fumigant dosage to soil type—for example, 4½ gallons of EDB per acre in light, sandy soil; up to six gallons or more per acre in heavier soil.

★

Soil fumigation has proved a success in controlling an important disease of California's big rose industry.

Using chloropicrin, D-D, EDB, and Vapam types of fumigants, S. A. Sher, assistant nematologist at the University of California, Riverside, succeeded in eliminating the stunting, chlorosis, and reduced root system caused by the root lesion nematode.

His best results came from chloropicrin and D-D, which improved rose growth approximately 400% compared to untreated roses.

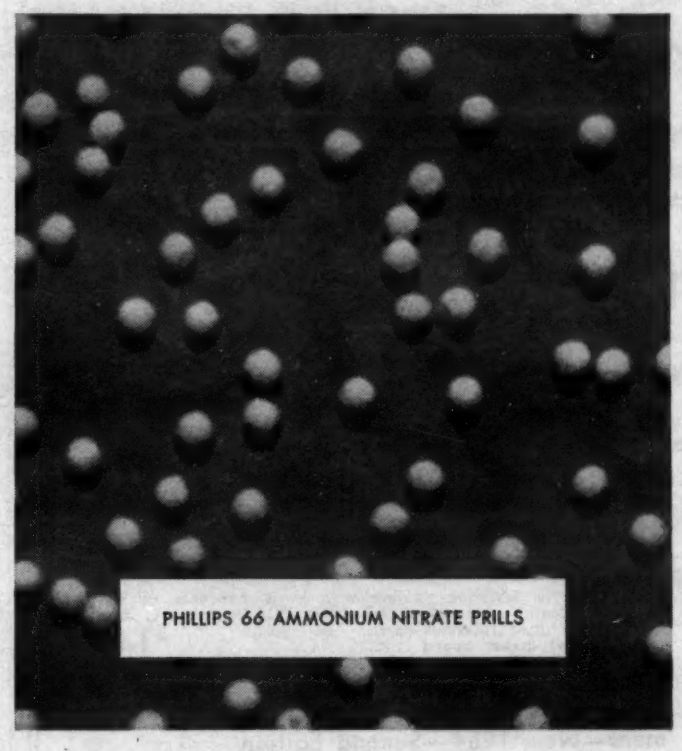
Nematode fumigation also helped control another rose disease called hairy root, Mr. Sher found in cooperative experiments with Donald E. Munnecke, assistant plant pathologist on the University's Los Angeles campus.

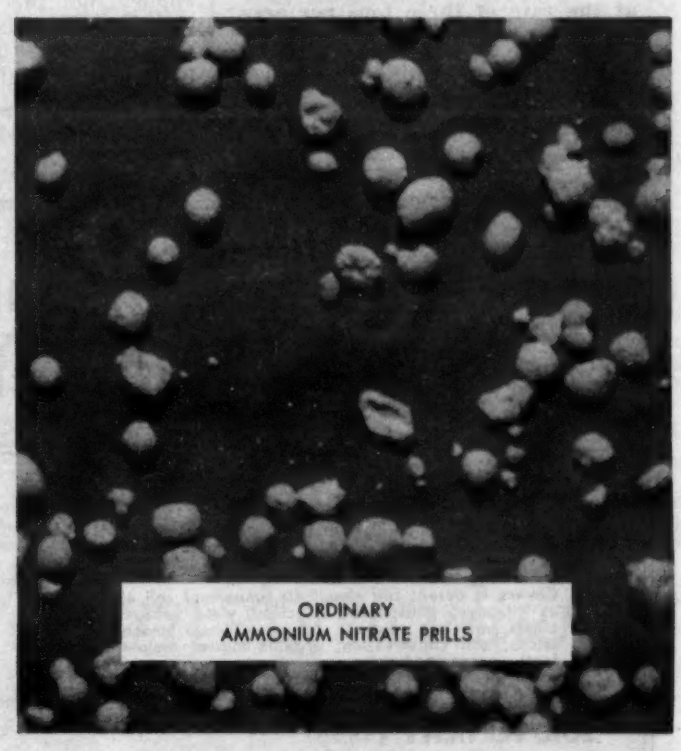
Southern California growers alone produce about 10 million rose plants annually, with a value of about $4,000,000. In recent years the two diseases have been serious factors limiting production of the crop, Mr. Sher reports.

★

A survey by Earl Priegel, district extension forester in Kansas, indicates that pecans are a profitable crop in southeast Kansas. One of the five foresters on the Kansas State College extension staff, Mr. Priegel made this survey in Allen, Neosho, Cherokee, Labette, Cowley, Linn, Wilson and Montgomery counties.

Total production used by the public last year, he found, was approximately 829 tons, worth an estimated $348,000. This is far less than 1955, a peak production year, when sales were over $1,500,000.





"EYE-WITNESS" PROOF

Unretouched Photos Show Dramatic Superiority of Phillips *66* Ammonium Nitrate

The evidence is there for all to see . . . new, guaranteed free flowing Phillips *66* Ammonium Nitrate is made up of uniformly round, hard and dry prills that *stay that way* in storage and during application.

This is the big difference that can make a big *difference* in your sales . . . because Phillips *66* Ammonium Nitrate delivers free flowing performance; and performance is what counts with you and your customers.

You get other extras, too, when you handle Phillips *66* Ammonium Nitrate. Consistent, convincing advertising of this outstanding product in leading farm papers; personal service from your Phillips *66* Fertilizer field man, and prompt deliveries are included in the profitable benefits of selling Phillips *66* Ammonium Nitrate.

Order your supply of Phillips *66* Ammonium Nitrate today.

PHILLIPS PETROLEUM COMPANY

Phillips Chemical Company, a Subsidiary, Bartlesville, Oklahoma

SALES OFFICES:

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ATLANTA, GA.—*1428 West Peachtree Street, N.W. Station "C" P. O. Box 7313*
BARTLESVILLE, OKLA.—*Adams Bldg.*
CHICAGO, ILL.—*7 South Dearborn St.*
DENVER, COLO.—*1375 Kearney St.*
DES MOINES, IOWA—*6th Floor, Hubbell Bldg.*
HOUSTON, TEX.—*6910 Fannin Street*
INDIANAPOLIS, IND.—*1112 N. Pennsylvania St.*
KANSAS CITY, MO.—*500 West 39th St.*
MINNEAPOLIS, MINN.—*212 Sixth St. South*
NEW YORK, N.Y.—*80 Broadway*
OMAHA, NEB.—*3212 Dodge St.*
PASADENA, CALIF.—*317 North Lake Ave.*
RALEIGH, N. C.—*401 Oberlin Road*
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Phillips 66

One tree was known to have produced 818 pounds of pecans, worth $263.

"Production of pecans in Kansas is primarily in the Marais des Cygnes, Neosho, Verdigris and Arkansas river bottoms. Frost and insects were the primary reasons for the poor crop in 1957," Mr. Priegel said.

Pecan grafting and grove improvement demonstrations are being planned for this year, he added.

★

Joe Bielenberg, a farmer residing in hilly farm country north and east of Salem, Ore., has proved that alfalfa will grow on such land if one utilizes fertilizers, irrigation and hard work.

Mr. Bielenberg's farm was planted to two test plots in 1956 and another test plot was planted in mid-April, 1957. He expects to make three cuttings in the current growing season.

The Oregon farmer recommends a pre-planting application of lime at the rate of three tons per acre for successful alfalfa culture on hilly lands such as his own. He fertilizers further with superphosphate and boron. He applied phosphates on all three test plots in mid-February this year.

On one test plot, Mr. Bielenberg planted oats with his alfalfa as a nursery crop. Last year he applied two heavy irrigations.

★

Grass yields increased as much as 2¼ tons per acre when high nitrogen fertilizer was added to pastures, according to results of demonstrations directed by C. J. Chapman, University of Wisconsin soils extension specialist.

"Fertilized pasture on the Loofsboro farm near Fulton, Wisconsin, yielded 6,844 lb. of dry matter per acre when 500 pounds of 10-10-10 fertilizer was added," says Prof. Chapman. "This compared to 2,156 lb. on the unfertilized pasture.

"These yields, taken June 10, 1957 represent only part of the season.

"We know that the protein content of pasture grasses runs from 18 to 20% during late May and early June when high nitrogen fertilizer has been applied. On this basis, the 2¼ ton yield increase represented the equivalent of a 16% dairy feed worth $60 per ton, or a total of $135."

Prof. Chapman reports that in another demonstration six acres of fertilized pasture provided 41 days of grazing for 17 to 20 milk cows, eight brown Swiss heifers and dry cows, plus two horses, up to Aug. 2.

The same dairy herd plus the horses grazed only 18 days on unfertilized pasture, Prof. Chapman says.

The fertilized pasture was ready for grazing 10 days ahead of the untreated field.

★

Low cost control of Johnson grass seems to have been reached by using sodium salt of dalapon.

Tests conducted cooperatively by the U.S. Department of Agriculture and the Georgia Experiment Station showed that both foliage and underground parts of the plant yielded to spray treatment.

Scientists report that sodium dalapon, properly used, can largely replace cultural practices, which usually require taking land out of crop production.

In 12 field studies, sodium dalapon sprayed on Johnson grass foliage at rates of 10, 15, and 20 lb. per acre, gave effective control without injury to corn, cotton, field peas, and peanuts, when planting was delayed for three weeks after treatment, or two weeks after disking treated Johnson grass.

N. M. DEALER

(Continued from page 9)

and ammonium phosphate, along with the ammonium sulphate. Very little potash is used, even though the area is only a few miles from some of the world's largest potash mines.

Mr. Craft says that many farmers know very little about the technical aspects of fertilizers. Unless the dealer knows what to recommend, his sales are often one-shot deals. And because newer and more concentrated materials are being placed on the market every year, the dealer must keep abreast of them. To do this requires study and frequent contacts with technical people in the industry.

Since he has been pushing better farming methods so long, most farmers know his advice is sound and follow his recommendation. They not only ask what kind to use, but accept his advice on how to apply it. He finds that perhaps the most effective use is to apply about 25% before planting, and then put on the other three-fourths as side-dressing during the growing season.

Insecticides must go along with fertilizer, he says, in this area the insects can often ruin a crop in a few days. He has been influential in getting farmers to practice early season control, because the thrips, aphids and fleahoppers often take off much of the early fruiting.

Insecticide sales are steady throughout much of the winter and growing season. In February, 1957, the firm sold over $10,000 worth of insecticides.

Mr. Craft does not own any spray rigs, applicators or airplanes, but works with independent contractors who buy the chemicals from him. During the early season most of the material is applied by tractor-powered applicators, but when the cotton becomes too tall for farm machinery the aerial contractors start raking the fields at regular intervals.

Credit is a problem here, as elsewhere. Mr. Craft gives 30 days credit, but loses very little in bad debts. He has dealt with the farmers so long that he knows the good risks and the bad. If a man is a marginal farmer or has a record of not paying his debts, he is not likely to get fertilizer from the company except on a cash basis.

Despite his large sales in recent years, Mr. Craft says there are many problems facing the fertilizer dealer. During hard times the farmers try to cut expenses by buying cheap fertilizer, or they put on lighter applications.

"This just makes matters worse," said Mr. Craft. "They use lower analysis materials and then make smaller yields. We try to point out that for every dollar spent for fertilizer they get several dollars back in profit."

Most of them finally come around to his point of view. For several decades he has been advocating and almost begging them to use better farming methods, and they have profited by it. Most customers end up buying the kind and amount of fertilizer he recommends.

"Without fertilizer and insecticides, you couldn't farm in this area," he says. "Farming is a big business, a scientific business nowadays, and the dealer in farm chemicals must recognize that fact if he is to stay in business."

LEAFLET AVAILABLE

BERKELEY, CAL.—Current control measures for insect pests of alfalfa hay are given in the newly issued University of California leaflet, "1958 Spray Program for Alfalfa Hay." Leaflet No. 85 (revised), the U.S. publication may be obtained free by writing the University of California, Agricultural Publications, 22 Giannini Hall, Berkeley 4, Cal.

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Doing Business With

Oscar & Pat

By AL P. NELSON
Croplife Special Writer

It was about mid-morning when Oscar Schoenfeld got out of his swivel chair and went to Tillie Mason's desk to look for the big dictionary which the firm owned. Pat had bought the dictionary at a farm auction for $5. Oscar had complained about the purchase at the time, but he had also found it of considerable use in looking up words now and then.

"Ach, Tillie," Oscar said. "What happened to the dictionary?"

The plump, ulcerish bookkeeper looked up from her work. "Oh, didn't you know? Pat lent it to Ezra Franklin. He hasn't brought it back yet."

"Ezra Franklin!" echoed Oscar. "That's the farmer on Route 3 that owes us money from last fall yet on fertilizer he bought. What does he need a dictionary for? He shouldt be out in the field working to make money to pay off his debts—not looking up words."

"Oh, it seems his wife and he are finishing up their entry for the newspaper's word contest," Tillie said. "They had some words that weren't in their little dictionary, so Ezra came here. He knows we've got that big dictionary, and Pat told him he could take it home and use it for a few days."

"Ach, that Irisher is still giving schtuff away," Oscar growled.

"The Franklins are entering many contests," Tillie said.

"Mr. Franklin told me he won a free razor and a year's supply of shaving cream writing a jingle, and his wife won a whole case of sliced pickles."

"Huh," snorted Oscar, "that's what's wrong with people nowadays. Always they want something free. Why don't they work for it like I do? I don't want to get rich when I don't deserve it. That Pat, too, always loking for the sale that will make us rich. And then he forgets his collections, he dreams so much."

"Well, some people win," Tillie protested. "Some people win automobiles, home show homes and things like that. You can't blame someone for trying."

"Always they want something they can't pay for," cried Oscar. "I'm gettin' sick of it. One of these days I will fool McGillicuddy. I will go out and collect. And I will tell those farmers something—those that have not paid us for four, five and six months."

Tillie was thoughtful. Suddenly, she said, "Oscar, you are always worried about collections. But do you realize that it takes time to go out and collect? When Pat collects, he can't sell, and so the firm gains one way and loses the other."

"Ach, you don't talk sense."

Tillie's eyes glowed. "What I mean is that there should be some other way to collect old accounts this spring without sending Pat out, or even you. We need all the help we can now to SELL, in the field, and right in the store."

Tillie sighed. "Oscar, selling to different kinds of people is not easy. No business man ever has it easy. But let's help ourselves in this rush season by offering some prizes on collections."

"Prizes?" Oscar frowned. "Tillie, are you getting as crazy as that Irisher? It's catching."

"I'm not crazy, Oscar. Listen. Suppose that for the month of May, we set up a prize for collection month, and it's only open to customers?"

"No," said Oscar. "We have enough prizes aroundt here that don't bring us any profits."

"We could offer to have prizes for the oldest account paid up in full," Tillie said, "and also prizes for other collections based on their overdue dates."

"You mean we shouldt pay people to pay their bills?" Oscar thundered.

"That's it," Tillie said eagerly. "Pat's time is worth three or four dollars an hour to us, and if it takes him an hour to visit a delinquent account, talk to him and come back, we've lost that time. Why not put that amount of money into a prize and make the farmer really want to pay his old bills so he can get a prize?"

Oscar was pacing up and down. "Tillie, Tillie!" he cried. "Always I thought you had a little sense anyway, even if you did quit on us this winter. Himmel, now you come up with an idea that is worse than some of Pat's. Why do we always have to give money away to get business?"

"Because sometimes you have to give money away to get some back!" Tillie said earnestly. "It costs a business man perhaps 3¢ to give a farmer a cup of free coffee. But if the farmer comes here just to get the coffee, stands around and then sees something he wants to buy, we got that 3¢ back out of the profit."

Oscar put his hand to his forehead. "Such a business!" he said angrily. "Tillie, you are worse than the government. Ach, don't do like they do. They give and give and give to people here and all over the world. What do they get back, huh? They get debts and we got to pay for it. Ach, if somebody wants something let them pay for it."

The door opened and smiling Ezra Franklin came in carrying the big dictionary. Beside him came his twelve year old daughter, carrying a wrapped package very carefully.

"Thanks for the dictionary, folks," said lanky Mr. Franklin. "I sure hope we win that word contest. This dictionary really has been a help, hasn't it, Susie?"

The farm girl nodded. "We've used your dictionary so much that Ma sent over three fresh coffee cakes for you folks. She just got done bakin' and Ma sure can bake. One coffee cake is for you, Miss Mason, one for Mr. McGillicuddy and one for Mr. Schoenfeld." Proudly the girl put them down.

"Oh, thank you," Tillie beamed.

When the Franklins had gone, Tillie said triumphantly. "Oscar, you have to give to get, and it works. Um, those coffee cakes smell wonderful."

"Ach," Oscar growled. "You are fooled too easy, Tillie. Coffee cake is coffee cake. But we still didn't get our bill paid by Franklin. Collection prize contest—nein!"

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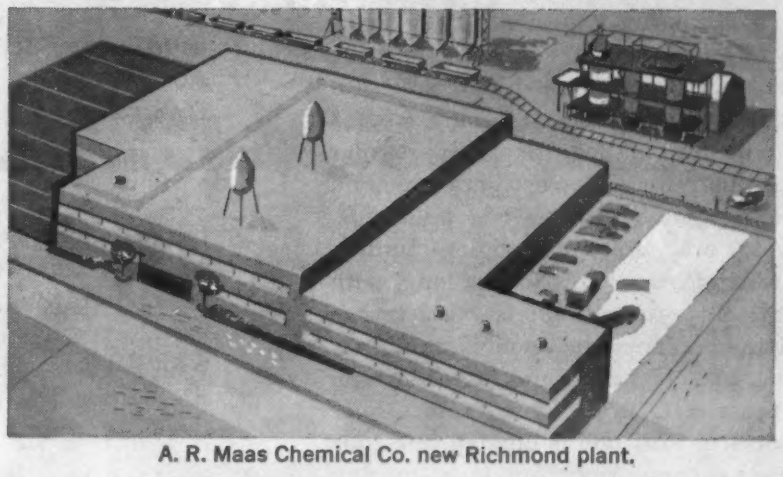

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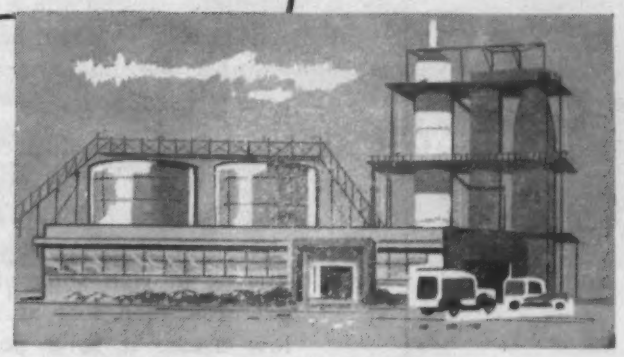

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WEED OF THE WEEK

Mr. Dealer—Cut out this page for your bulletin board

JIMSON WEED

(Datura stramonium)

How to Identify

Jimson weeds are tall, bushy, coarse, and have a fibrous root system. They grow from one to five feet in height, and the stems are stout, branched, and green-to-purple in color. Leaves measure from 3 to 8 inches in length, with regular toothed margins. They are dark green on top and light green on the underside. Flowers are white or violet, funnel-shaped, and from 1 to 4 inches long, with the largest portion about 1½ to 2 inches in diameter. The seed pod is round, is from 1 to 2 inches from tip to bottom, and has short, stout, sharp spines over the surface. This pod is divided into four different sections that contain many flat, wrinkled, round, dark brown or black seeds. Easiest identification lies in the trumpet or funnel-shaped flower and the prickly seed pod.

Damage Done by Jimson Weed

These unwanted plants, when eaten by either man or animals, is poisonous. This is true of all parts of the plant. Since it thrives in rich soils of gardens and in pastures, feed lots and along creeks in low areas, it is a potential or actual trouble-maker. The weed also emits a disagreeable odor. Ordinarily, livestock will not eat this plant as such, but the animals may be poisoned by eating very small plants or some leaves when mixed with cured hay.

Life of the Jimson Weed

The plant reproduces only by seed, and the seed may have lain dormant in the soil for a number of years before sprouting and growing. The weed appears over a widespread area of the United States, with particularly troublesome activity in the South. The plant was originally introduced from the tropics.

Control of Weed

Jimson weeds may be controlled by either cultural or chemical means, depending largely upon the economics of the situation and whether the weed appears in crops to be used for human consumption or for feed. If chemical herbicides are used, care must be taken to check with local or state authorities as to the susceptibility of surrounding crops to the chemical, and also for information covering possible residues.

Illustration of Jimson Weed courtesy of U.S. Department of Agriculture.

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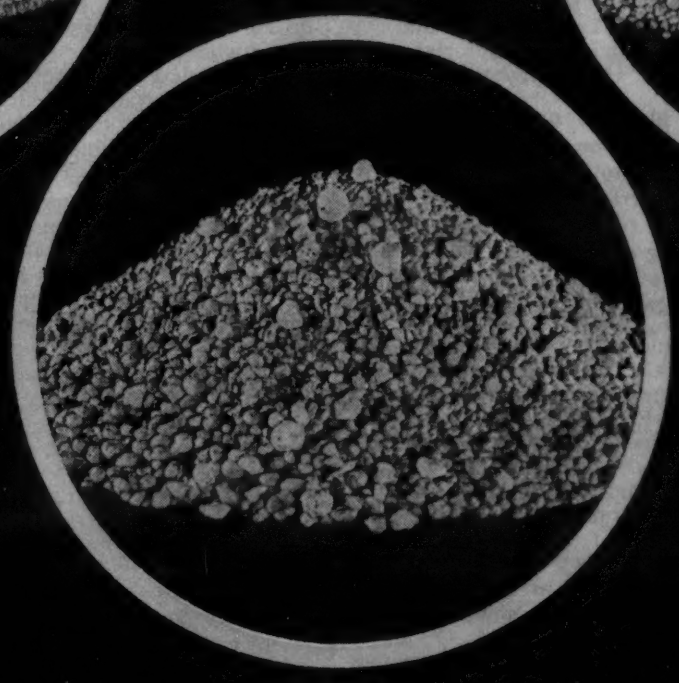

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NEW UREA PLANT UNDERWAY

Nationalist China Rapidly Enlarging Fertilizer Industry

TAIPEI, TAIWAN (FORMOSA)—With the help of aid funds from the U.S., this island bastion of Free China is rapidly enlarging its fertilizer industry. The 13,000 square mile island 100 miles off the China mainland supports a population of 10,000,000 with an arable land surface of only 4,000 square miles—the rest is rugged mountainous territory covering the central and eastern portions of the island.

Taiwan's principal crops are rice and sugar, the latter accounting for more than half of the island's foreign exchange since 1945. Both are exported in considerable quantities. Other crops grown are sweet potatoes, peanuts, pineapples, tea, bananas and diverse vegetables.

To increase food production from a soil deficient in both nitrogen and phosphorus compounds, Taiwan needs fertilizers, which she both manufactures and imports. In 1956, Taiwan spent $21,731,000 for 359,000 metric tons of imported fertilizers. Of this, 282,000 metric tons (costing $18,370,000) were ammonium sulphate purchases from Japan. The remainder was mostly calcium superphosphate from Japan and potassium chloride from Germany and France, plus small quantities of phosphate-bearing rock from Morocco and the U.S.

Taiwan produced 311,000 metric tons of fertilizers herself in 1956, somewhat less than half her current requirements, according to information from the Nationalist Government.

Three government-owned fertilizer companies are now in operation on Formosa: Taiwan Fertilizer Co., the largest, with five plants in production and one under construction; Kaohsiung Ammonium Sulphate Works, at the southern tip of the island; and Hwalien Nitrogen Fertilizer Works, on the east coast.

Taiwan Fertilizer Co. (TFC) has two plants at Keelung, Taiwan's northern port, producing respectively 33,000 metric tons per year of calcium cyanamide and 36,000 metric tons per year of superphosphate. TFC's Kaohsiung plant produces 49,000 metric tons of superphosphate per year. Her plant at Lotung produces 14,000 metric tons of fused phosphate per year; and the Hsinchu plant produces 39,000 metric tons of calcium cyanamide per year.

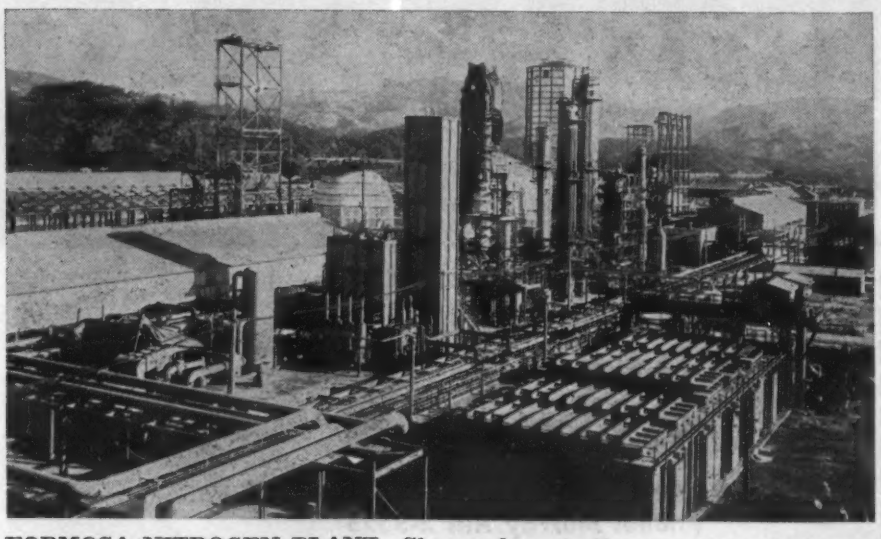
Kaohsiung Ammonium Sulphate Works produces 70,000 metric tons of that material per year, while Hwalien Nitrogen Fertilizer Works produces an equal quantity of nitrochalk, a mixture of ammonium nitrate and limestone.

Now underway is construction of TFC's sixth plant, which will produce coated fertilizer urea (containing 45% nitrogen) and uncoated industrial grade urea (containing 46.4% nitrogen). This plant alone, to be in production by summer, will represent an investment of $29,000,000, of which $17,000,000 will pay for imported equipment and the consultation and design services of the Hydrocarbon Research Co. of New York. The new plant will add 800 workers to the 3,800 now on TFC's payrolls in its five plants. There are three eight-hour work shifts daily.

Hydrocarbon is furnishing engineering, procurement and construction supervisory services for the plant. Subdesigner of the urea section is the Vulcan Copper and Supply Co. of Cincinnati, licensees of Inventa Process, a Swiss urea-producing method. Gasification of coke and snythesis of ammonia will also be undertaken. Coke is available in Taiwan itself—and this will be the only raw material (plus air) needed in the process.

The plant is now going up in Nankong, seven miles from Taipei, Taiwan's capital. It will produce 84,000 metric tons of coated urea in coated form and considered the fertilizing equivalent of 180,000 metric tons of ammonium sulphate, now largely imported.

All equipment, with the exception of two German-made compressors, will be American: gas producers from Wellman Engineering Co. of Cleveland; sulfur removal unit from Wilputte Division of New York Allied Chemical and Dye Corp.; air suppression unit, designed by Hydrocarbon Research, from Project Fabrication Corp., College Point, N.Y.; reversing exchanges in air suppression unit from Trane Co., New York; ammonia converters from A. O. Smith Co., New York; refrigeration system from Carrier Corp., New York; Horton sphere (for liquid ammonia storage) from Wyatt Metal Co. of Houston; two centrifugal compressors and eleven other reciprocating compressors from Clark Brothers, New York; gauges, recorders and indicators from Foxboro Co., New York; most electrical equipment and steam turbines from General Electric International, New York; towers and vessels from Chicago Iron and Bridge Co. (converters, actifiers, etc.); urea process machinery from Vulcan Copper and Supply Co., Cincinnati; evaporator from Rodley Hunt, Boston; prilling tower from Vulcan (designed by Uhde Co. of Germany); urea finishing equipment (drier, duster, prill coater, cooler) from Bartlett and Snow Co., Cleveland; broiler plant from Combustion Engineering Co., New York; water treatment plant from Permutit Co., New York; water process pumps from Peerless Pump Co. division of Food Machinery and Chemical Corp., New York; pumps in urea plant, Allis-Chalmers of Milwaukee; process pumps, United Centrifugal Pump Co., New York; water cooling tower, Fluor Co., New York; coal and coke handling system, Gifford Wood Co., New York; prill tower, designed by Uhde, Puget Sound Fabricators, Seattle.



FORMOSA NITROGEN PLANT—Shown above is the new urea plant, now under construction near Taipei, Taiwan (Formosa) by Taiwan Fertilizer Co. The plant, which will produce coated fertilizer urea and industrial urea, will represent an investment of $29 million.

Importance of Bindweed Control Stressed at Texas Weed Meeting

PLAINVIEW, TEXAS — Bindweed is a more serious threat to row crops than to closely-drilled crops such as wheat, according to Jake R. Ubel, director of the noxious weed control program in Kansas. In addressing the annual meeting of the Hale County Noxious Weed Control District, Mr. Ubel said bindweed can virtually take possession of land unless strict control measures are used.

He said that in a 12-year experiment at the Fort Hays Experiment Station in Kansas, the bindweed reduced milo yields by 78%, but reduced wheat production by only 5.2%. He attributed the difference to the fact that wheat is planted in the fall or winter and is less affected by the summer-growing bindweed.

He told the 100 or more farmers that Kansas applied more than two million tons of sodium chlorate to infested land in 1956, and then increased this by nearly a half million tons in 1957. Also other chemicals were tried in various parts of the state.

The farmers were also told that only seed free from bindweed contamination should be used, that soil sterilants can be economically used on areas less than two acres, and that intensive cultivation can help in eradicating the weeds.

Another speaker, Paul Mills, assistant engineer with the Texas Highway Dept., said his department had ordered 120 tons of chemicals for the control of noxious weed along the highways. These soil sterilants will be used to treat the area between highway and farm boundary, providing the farmer agrees to treat his land similarly.

Several chemicals may be used effectively, according to Ollie Liner, Hale County agricultural agent, who also addressed the group. Also another pest, Johnson grass, which is quite serious in West Texas, can be controlled by using different chemicals, Mr. Liner said.

A panel discussion composed of W. F. Holloway, district director; Frank Moore, prominent farmer of Plainview, and M. D. Moore of the E. I. du Pont de Nemours & Co., Inc., Houston, brought out several additional facts about bindweed. They said that soil sterilants must be applied at least ten feet beyond the edge of a bindweed patch, or the roots would spread under allowing the plants to emerge beyond the treated circle. Also they pointed out that plants often died as long as two or three years after treatment.

Though not so heavily infested here as in some other areas, there are an estimated 3,000 acres of bindweed in many West Texas counties.

GARDEN CENTER OPENS

SEATTLE — The Viewlands Fuel Garden Center recently opened for business here. John Rutherford is manager of the garden center and president of Viewlands Fuel is John Bonar. The decking of the new site is covered with glass fiber and is equipped with sliding glass doors. Sloping ramps lead to a selection of trees and bulbs. The plant will handle seeds, bulbs, insecticides and garden equipment.

Russell L. Gulick

JOINS PCA — Potash Company of America has announced the appointment of Russell L. Gulick as sales representative for Florida. He will work in conjunction with Paul C. Ausley, Orlando, and will be under the general supervision of W. H. Appleton, southern sales manager. Mr. Gulick will make his headquarters in Atlanta. A graduate of the University of Richmond, Mr. Gulick for the past few years has been associated with the fertilizer industry in the Middle Atlantic states.

McGuire Chemical Co. Plans Water Terminal

OAKLAND, CAL. — Establishment of the first complete deep water chemical terminal, processing and packaging plant on the West Coast is planned in the Port of Oakland Outer Harbor by the McGuire Chemical Co. of Oakland.

The Oakland Board of Port Commissioners has authorized Dudley Frost, executive director of the port, to complete negotiations with McGuire Chemical for a 20-year lease of the Seventh street Pier and 200,000 square feet of open area adjacent to the pier.

McGuire Chemical will move all operations from its present facility at 833 - 47th Ave., where only rail shipments can be received, to the new integrated center in the Outer Harbor, where both rail and water shipments can be received and all processing and packaging operations centralized, according to W. J. McGuire, president.

McGuire also operates a deep water chemical terminal in San Pedro, but processing and packaging are not included in that facility.

All preliminary negotiations for the lease of the Outer Harbor properties have been completed.

The Port will invest about $111,000 in modifications to the pier, which was built in 1922, and about $50,000 for dock modifications, repairs and dredging to accommodate large tankers such as the 20,000-ton "Texan," owned by Joshua Hendy Corp., and which is used to haul petrochemicals to McGuire's San Pedro terminal.

McGuire's initial investment will total $200,000 to move from the East Oakland plant and install initially 40 tanks ranging in capacity from 10,000 to 50,000 gallons.

An additional 20 tanks with capacities of 210,000 (5,000 bbl.) to 420,000 (10,000 bbl.) gallons will be constructed on the site by McGuire.

Piling under the heavy tanks will be required as they are constructed, with the Port eventually investing a total of about $300,000, which will be recovered in rent plus interest, and dockage and wharfage.

Petrochemicals handled by the McGuire Chemical Company are used in insecticides, among many other products. The first operation in the new facility will begin about June 1, Mr. McGuire said.

REGISTRATION

(Continued from page 7)

compounds defined as pesticides within the meaning of the law? Granted, the mechanics of handling would be much simpler if they were included, but the basic decision must be reached from the philosophic approach to the law. If these compounds fulfill the requirements of (1) that they are generally, rather than specifically, necessary for the production of the raw agricultural commodity and, (2) that the consumer may be adequately protected, they should be included under both FIFRA and Section 408. If they do not fulfill this critical position, then further philosophical bases must be developed on which to warrant their special handling.

The problem of complying with several sections of the Food, Drug and Cosmetics Act is a serious matter which requires considerable thought and effort. The primary example is the post-harvest applications of pesticides to protect food from insect and fungus damage. This is an important usage of those materials to control quality after harvest and tolerances have been established to allow this practice.

However, fungicides used post-harvest must be considered as preservatives under Section 403-K of the Act and special labeling of the commodity must be provided. This is difficult to understand, since there is no attempt to disguise quality, only to maintain it. To label strawberries, for example, treated post-harvest with a fungicide as being preserved, is a bit farfetched. In fact, it would be extremely misleading because it connotes an action which is not present. The problem must be again resolved by going to the basic issues involved.

It was the intent of the preservative section of the law to prevent spoiled food to be disguised or preserved at the expense of the consumers' health. Under conditions today, the problem is no longer one of hiding or disguising such food, but of protecting the crop so that its advantages of prime quality may be realized by the consumer, and of protecting the consumers' right to safe food. Possibly the safeguards to insure against unscrupulous use of the chemical is one means of settling this problem to the mutual satisfaction of industry and government.

A third problem is one of personalities and this exists on both sides of the fence. I would like to point out clearly to a few in industry that most of the men I know in the regulatory agencies are dedicated individuals who work hard to uphold the ideals of the law. They are doing a good job of understanding industry problems and are eager to find adequate answers.

By the same token I would also like to point out to a few people in government that not all members of industry are out for a fast buck at the expense of the farmer or the public. The industry reputation is jealously guarded by providing what is needed—service, effective materials and facts. Both groups must realize they are working together for the common good, not working desperately for jealous individual interests.

We are all faced with the problem, in any research undertaking, of designing the experiment to show all the facts. If results were known in advance, many an experiment would be better designed. A good example of this is the results of the Methoxychlor Advisory Committee where the committee pointed out that the studies designed and executed were insufficient to evaluate the limits of safety of the compound in milk.

A similar situation arose with the organic phosphates, where studies initially designed to show tissue damage, failed to show the real effects on circulating cholinesterase. Later, it became necessary to evaluate the possibilities of potentiation from combination of these compounds in terms of limits of safety. As pointed out in the discussion on Section D of the petition, changes in evaluating residue necessitate changes in collecting and analyzing samples, and studies must be repeated under a different design.

These situations and problems are a healthy sign within the industry because they represent sound progress, yet fulfilling the obligations to our society to give them a superior, yet safe, food supply.

RESEARCH DIRECTOR

TOLEDO, OHIO—Virgil S. Tadsen has been appointed director of research and development of the Gibsonburg Lime Products Co. He has been with the firm 17 years in various capacities.

Zero Tolerance Proposed for Aramite On Fruits, Vegetables

WASHINGTON—Zero tolerances for use of the pesticide Aramite on fruit and vegetable crops would be established by the Food and Drug Administration under a proposal published in the April 26 Federal Register. The proposal would rescind tolerances of 1 part per million now in effect.

FDA said its proposed action is based on new data submitted by the manufacturer, Naugatuck Chemical Division, U.S. Rubber Co. This data indicates that Aramite when fed in larger amounts causes cancer in two species of test animals, FDA said. A "zero" tolerance for Aramite would mean that no food crop bearing any residue of this pesticide could legally be shipped across state lines.

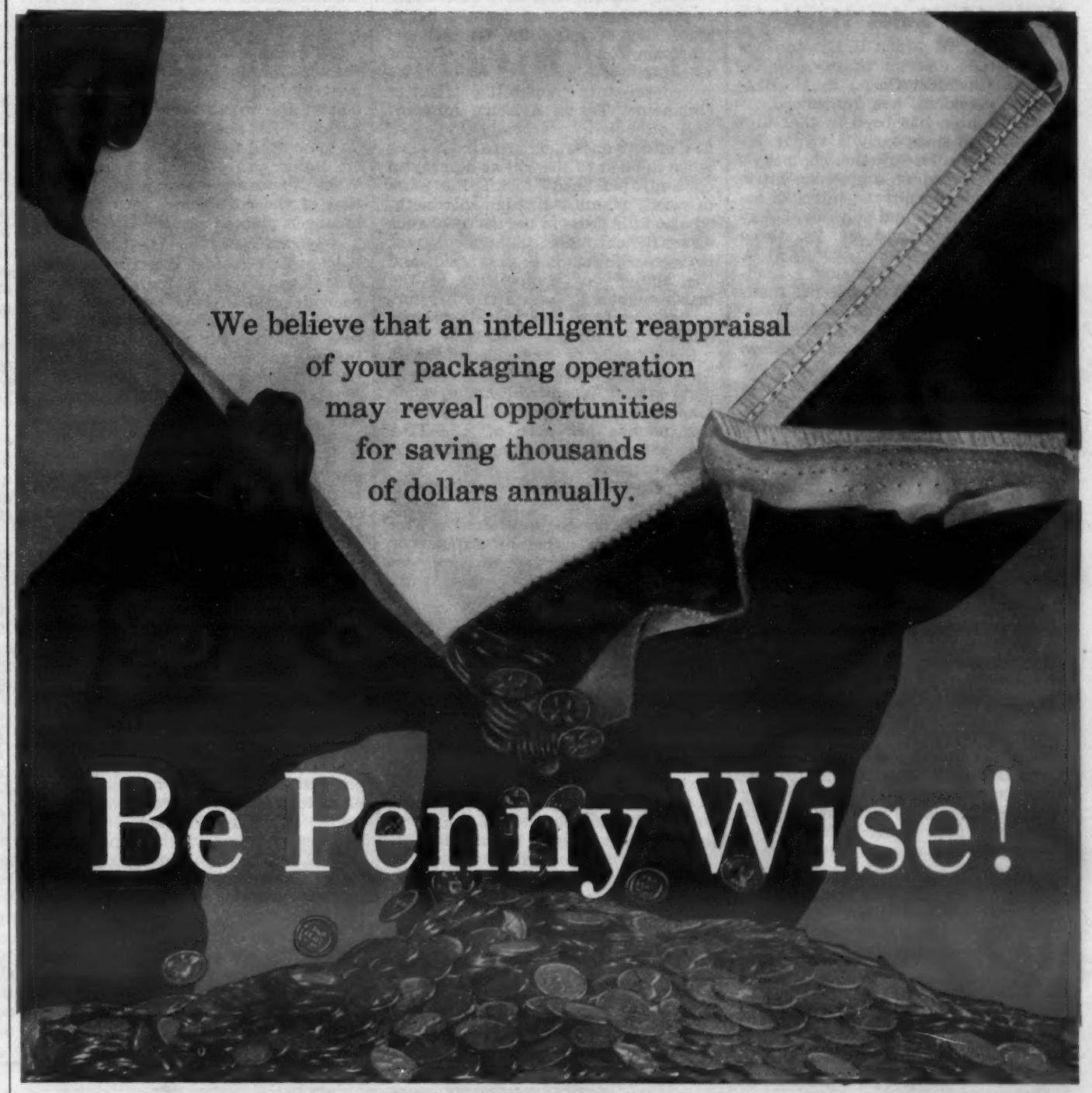
A tolerance of 1 part per million for residues of Aramite on certain raw agricultural commodities and a zero tolerance on certain forage crops were established Sept. 30, 1955 after an advisory committee considered the petition. At that time the committee also recommended:

"That the petitioner be advised to secure acceptable data on the chronic toxicity and carcinogenicity of Aramite at feeding levels between zero and 500 parts per million in the mouse, rat and dog.

"That the entire problem be reviewed by this or another committee in 1957, when further laboratory and other data are available."

SALESMEN'S GROUP TO MEET

NEW YORK—The Salesmen's Association of the American Chemical Industry will hold its annual dinner dance Nov. 7 at the Waldorf-Astoria Hotel, and its annual Christmas party Dec. 17 at the same hotel, according to Paul E. McCoy of American Potash & Chemical Corp., chairman of the SAACI Entertainment Committee.



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John B. Clopton

John B. Clopton New Escambia Sales Head

NEW YORK—John B. Clopton has been named director of sales of Escambia Chemical Corp., R. U. Haslanger, president, has announced.

Mr. Clopton has been in the sales organization since early last year. He will direct sales of the company's products, including ammonia, nitric acid, ammonium nitrate, nitrogen solutions, methanol and polyvinyl chloride resins, produced at its three plants near Pensacola, Fla.

He is a native of Alabama, a graduate of Alabama Polytechnical Institute at Auburn, and resides in Westport, Conn. His office is in the company headquarters at 261 Madison Ave., New York.

Additions Made to Nematode Quarantine Area

WASHINGTON — Minor additions were made to the soybean cyst nematode regulated areas in a total of four counties in Kentucky, Missouri and North Carolina, effective April 29.

Added to the Fulton County, Kentucky, regulated area are all presently non-regulated parts of Island No. 8 in the Mississippi River and of the detached portion of the county, plus a single farm. In adjacent New Madrid County, Missouri, the regulated area, formerly limited to three individual farms, will include approximately 108 square miles in the southeastern corner of the county, together with an isolated farm. North Carolina's regulated area has been increased by four farms in New Hanover County and a single farm in Pender County.

CONTROLLER NAMED

MISSION, TEXAS—Ralph Martin has joined the Hayes-Sammons Chemical Co. of Mission, Texas, and Indianola, Miss., as new controller, according to an announcement by Thos. B. Sammons, Jr., company president.

HERBICIDES

(Continued from page 1)

success in using granular insecticides on certain crops. The materials consist of carriers such as granular Fuller's earth or vermiculite impregnated with weed-killing chemicals.

These herbicidal preparations have been used effectively in cooperative experiments in Maryland, New Jersey and Texas for control of emerging weeds in several horticultural crops, including tomatoes, Irish potatoes and strawberries, following the last cultivation.

Some herbicides, such as CIPC [isopropyl N- (3-chlorophenyl) carbamate] and DNBP [4,6-dinitro ortho secondary butylphenol], used separately or in combination, have also been applied successfully in granular form for experimental control of weeds in a wide range of woody ornamental nursery-stock species, USDA reported.

Some experiments have been made in pelletizing a few of the new herbicides, such as 2,3,6-TBA, fenuron and monuron, for use as a soil treatment to control brush.

Federal-state cooperative trials in Oklahoma, Texas, Arizona, Missouri and elsewhere previously indicated the effectiveness of these chemicals when applied to the soil as a spray in concentrated bands to kill the roots of woody plants. Although this method also kills grass in the narrow bands where the chemicals are applied, grass between the bands is uninjured, and the absence of competition of the brush enables grasses and other forage species to re-establish themselves quickly, according to USDA.

Such bands of herbicide, placed 6 feet apart, gave a 90% kill of shinnery oak at Woodward, Okla., when fenuron was used at 2.6 lb. per acre. Ten pounds per acre of 2,3,6-TBA gave 93% control when applied in the same manner.

In pellet form, however, such herbicides can be applied in the desired concentrations to individual spot areas of brush, either by airplane or ground equipment, the experimenters believe. Success of some experiments has led to proposals for limited use of pellets in brush control in Texas. Granular formulations of soil-sterilant herbicides have also shown promise for the control of certain aquatic weeds.

Firm Incorporated

TWIN FALLS, IDAHO—Articles of incorporation were filed here recently by the Gem State Chemical company. Principal purpose of the company is to engage in buying, selling, manufacturing and distributing of chemical products and other types of goods and merchandise. Place of business is listed as Twin Falls. Capital stock is $10,000 divided into 100 shares listed at a par value of $100 each. Incorporators listed in the articles were Jerome P. Wilson and John B. Robertson, both of Twin Falls, and R. W. Reed, Gooding, Idaho.

Rain, Weather Hinder Mid-South Farmers

MEMPHIS — Efforts of Mid-South farmers to "catch up" with their spring plowing, fertilization and planting were hindered again last week by rainy, cool weather in many areas of Arkansas, Louisiana, Missouri, Mississippi and West Tennessee. Over most of the area land conditions had improved during the middle part of April, and farmers in some areas had worked around the clock to get their land prepared and planted to cotton, corn and other crops.

Some farmers in the Mississippi Delta were able to get much of their cotton planted early in the week of April 20 only to have it flooded by heavy rains during the last of the week. Before the rains came, much headway had been made, especially in the central and south Delta areas, in planting cotton and corn. It is estimated that around 30% of the cotton has been planted along with a small acreage of corn. Some areas in the hill section of Mississippi were reported still too wet for land preparation.

Before last week many Arkansas farmers had managed to make a big dent in field work. Then during the last of the week, rains flooded some cotton fields, and observers said some of the cotton will have to be replanted. Rains also delayed operations in West Tennessee, where a small fraction of the cotton and corn acreage has been planted.

Agronomists of the Mississippi Extension Service and Experiment Station have advised farmers who have been delayed in land preparation to apply all their mixed fertilizers before planting, instead of rushing through the plantings with the intention of side-dressing later.

The agronomists state that crops will have to grow off rapidly as soon as favorable weather arrives and that it is very necessary that plenty of plant food be available as soon as the seedlings start growing. They also urge farmers to take delivery immediately on all the fertilizer they will need during May. Dealers and manufacturers may not be able to supply their needs if a very heavy demand occurs within a short period, the agronomists state.

New Drum Sizes

BELLWOOD, ILL. — Vulcan Containers Inc. has expanded its production to include new open head grease drums and 15 gallon open and tight head drums with the new universal diameter of 13 15/16 inches as a production standard. The new standardized line of drums, which complies with federal, military, and Interstate Commerce Commission specifications, will simplify warehousing and distribution operations of such basic users of steel packaging as the chemical, adhesives, industrial maintenance supplies and petroleum products industries, according to George E. McMahon, executive vice preseident of Vulcan.

FARM INCOME

(Continued from page 1)

of crop with adequate use of plant foods and protective chemicals.

Another income factor not to be ignored in addition to highly favorable open market price prospects is that of the soil bank, wherein corn and cotton farmers have placed respectively 7 and 5 million acres of land which this year will earn soil bank payments.

In the Cotton Belt of the Southeast small farms have placed land in the soil bank as the farm economy shifts its emphasis into livestock or because of unfavorable planting conditions which existed at the time of the soil bank land withdrawal deadline.

In Texas prolonged and continued rains have also retained much of the previously committed soil bank contracts in soil bank coverage. However, for Texas this condition is greatly different than in the old Cotton Belt of the Southeast. Texas cotton farmers are of larger magnitude and soil bank income is additional to harvest income.

While the income side of the farm ledger looks extremely favorable at this time — and weather conditions generally indicate maintenance of the rosy outlook—it must be remembered that production costs and overhead remain high. This adds another string to the fertilizer salesman's bow as he has the opportunity to show the farmer the cost reduction aspect of adequate use of fertilizer and pesticidal chemicals through greater per unit yields per acre.

In its farm income report USDA noted that cash receipts in the first quarter of 1958 totaled about $6.9 billion, up 7% from the first three months of 1957. Total marketings were a little larger than last year and prices averaged considerably higher. Livestock receipts in the 1958 quarter were up 12% over the 1957 quarter and crop receipts were about the same.

Preliminary estimate of farmers' cash receipts in March is $2.1 billion, 11% higher than in March a year ago.

The highly optimistic news contained in the Farm Income Situation Report is reaffirmed in the USDA agriculture price situation which for the month of April reveals further rise in farm prices over March, 1958.

This price report states that prices received by farmers during April had increased by three percentage points over March and now stand at 24 points higher than in April, 1957.

In this report USDA says that the index of prices paid by farmers also rose and attributes the advance in prices paid by farmers to higher farm production costs.

This condition points up the opportunity of the fertilizer industry to place great emphasis on representations to farmers of the cost reducing potential of adequate use of fertilizer materials.

NEW FACILITIES—The main entrance to the newly-enlarged Modesto (Cal.) Agricultural Laboratory of the Shell Development Co. is shown at the left. Scientists at the laboratory grow weak crops and strong insects on purpose (second from left). Grade A weeds also are grown. At the same time, new chemicals to help kill insects, control weeds and help raise better crops are tested. The plot shows flowers under test cultivation. Dr. William E. Rader, plant pathologist (second from right), examines leaves of a test plant for traces of plant diseases which annually cause an estimated $4 billion damage to U.S. crops. Entomologist Walter Hall (right), reaches into a cage of resistant flies at the insectary at the laboratory.

WACA MEETING

(Continued from page 1)

number of people in the U.S. as a whole will be increased by 15% in 1965, the western states will see a much greater expansion of population. California, in 1965, will have a population 36% greater than now, Arizona 51%, Washington 24%, Idaho 16% and Oregon 28%. The average increase by 1965 in the western states will be 34%, he said.

Mr. Coke emphasized the point that most of the crops grown in the West are what consumers want, rather than agricultural commodities which add to surpluses.

Illustrating his point by mentioning specific crops, he said that by 1975, despite continually expanding population in the U.S., the country will continue to consume about the same amount of some crops as at the present time. However, many of the major crops of California and other western states will enjoy greatly increased demand. Citrus, he said, will require an increase of 75%, tomatoes 32%, eggs 40% and vegetables 38%. "There will be a complete change in the agricultural economy of this area," Mr. Coke declared.

In some other sections of the nation, demands will be "spotty," he predicted. The areas growing products demanded by the consumer will of course enjoy the greatest prosperity, the speaker declared.

At one point in his address, Mr. Coke raised the question of whether there will actually be enough food to go around in keeping with our current standard of living. The present surplus, great though it appears to be, is actually only about 6% more than is needed.

"The real problem," he said, "is the $7 billion tied up in surplus commodities, accumulated over a long period of time, of things for which there is an inadequate market." Mr. Coke added that the problem is compounded by the fact that exports have gone about as far as possible without the risk of upsetting world markets and alienating friendly nations abroad, and the domestic market is suffering already from the situation.

"We will continue to have surplus problems for many years ahead," Mr. Coke predicted. "We must just learn to live with it." He pointed out the fact that despite the removal of thousands of acres of agricultural land through urban development, highways, industrial plants and airports in California, the value of agricultural products remains at the same high level. Los Angeles County, usually regarded as highly urbanized and industrialized, is still fourth in agricultural income in the state, and California itself is first in gross farm income in the U.S. "And it will remain in that position," Mr. Coke added.

The change to more intensive farming, greater production from fewer acres and better water management will all add up to a better future for western agriculture. The number of farms is decreasing, but the units are much larger, and "this is just a start toward meeting future needs," Mr. Coke said.

Dr. Boysie E. Day, assistant plant pathologist, Citrus Experiment Station, University of California, Riverside, discussed weed control. He pointed out that there is still a long way to go before the nation gets ahead of the problem of controlling unwanted vegetation both in agriculture and around industrial areas.

Dr. Day reported that weed control research is still relatively small in view of the tremendous savings to be realized in the application of chemical herbicides. Savings in California alone, he said, amount to $700 million through herbicides. Yet, research for weed control in the state is only $7 million, just 1% of the savings.

He remarked that the economies in labor saving in the use of herbicides are tremendous. "Every dollar spent in weed control by chemical herbicides does the work costing $25 by hand labor," Dr. Day said.

Research on weed control, as it is done now, began only about 12 years ago, the speaker said. Early products, 2,4-D, 2,4,5-T and MCP have not yet reached their full potential, he said, because their possibilities are yet to be exhausted. These compounds have many analogues, he said, and some of these are likely to be very selective and specific in their herbicidal properties.

The ideal herbicide, Dr. Day said, is one that is specific against certain weeds in certain crops. From a practical standpoint, however, he conceded that there are so many crops and so many weeds, that it is not likely that such herbicides will be found in many cases.

Richard W. Young, American Cyanamid Co., Stamford, Conn., described to the group some of the problems faced by the chemist in the development of pesticides. He said that no matter how good a basic product is, the quality of formulation is the key to how well it will perform in the field. He lauded the research wing of industry, saying that it is meeting a great challenge to produce complex chemical products at economical prices.

The chemist reviewed the various laboratory steps taken in determining a candidate compound's toxicity, its safety, its mode of action, its storability and its residue factors.

Presiding at the business session in the morning were Charles O. Barnard, San Francisco, executive secretary of the association, and Ivor Burden, United-Heckathorn Co., Richmond, Cal., association president.

A luncheon was served to the group at noon in the Biltmore Hotel, headquarters of the convention.

Harry Edward Spires Heads California Bureau

SACRAMENTO—Harry Edward Spires, assistant chief of the Bureau of Field Crops, California Department of Agriculture, since April 1, 1957, has been named bureau chief succeeding the late William L. Hunter. The position of assistant chief formerly held by Mr. Spires will be filled by Van Paul Entwistle, formerly supervising feed chemist in the Bureau of Field Crops.

Mr. Spires is a graduate of the University of California. A native of Blairsville, Pa., he entered California state service as a junior chemist in the Bureau of Field Crops at Sacramento in 1935. Mr. Entwistle entered state service in 1939.

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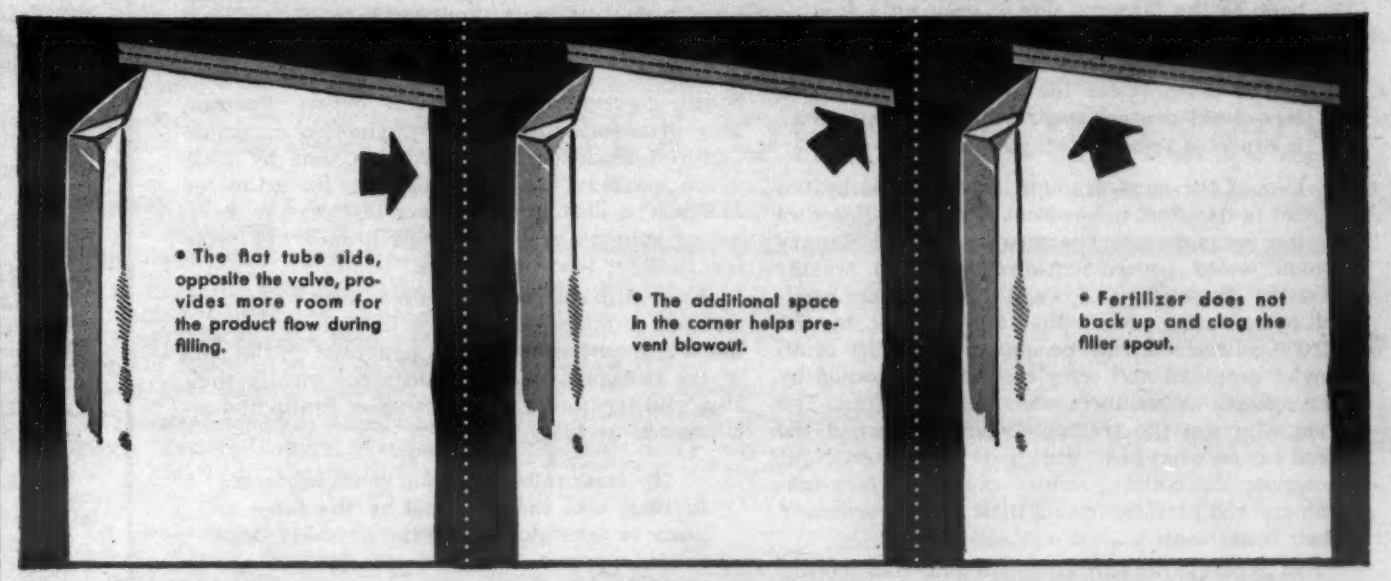
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DEADLINE, 1961 . . .

Soviets Hope to Match U.S. Crop Output

FOR whatever it is worth to the American agricultural chemical trade, it is interesting to note the trend in Russian agriculture is in the direction of giving Soviet farmers greater production incentives and more control of their own affairs, and providing them with more fertilizer. Nikita Khrushchev and his lieutenants are apparently coming around, reluctantly, to realize that more concessions must be made to their farmers if the growers are ever to approach production goals based on U.S. output of key foods.

It will be a long time before the Soviet becomes a surplus food nation, yet, one should not overlook the possibility of the day to come when the communistic farmer may be given enough incentive to produce more to the acre. Those agricultural experts sent to the U.S. three years ago took back with them much information on how the independent grower in "decadent" America gets from 100 to 200 bushels corn an acre and how he manages dairy and beef herds to maintain maximum production. The obvious contributing factors, of course, are the use of superior tools including fertilizers, pesticides, and weed killers; but apparently the Russian leaders have come to admit that farmers can somehow take a lot more interest in their work when the grower himself is allowed to keep part of the benefits accrued from extra effort on his part.

An article on the Russian farm situation was published recently in the Wall Street Journal which observed that while the Red government has no intention to give land back to the farmers, nor to open up a free market for agricultural goods, there are many indications that increased concessions are in prospect for the peasants. At least, less direct control over farming operations is expected to be forthcoming from Moscow.

One of the most dramatic moves made by the Soviet in its effort to hand out agricultural goodies to the peasants was the step taken in February which ended government-owned central tractor stations. These stations owned the machinery needed for planting, cultivation and harvest by the 82,000 collective farms, occupying some 70% of all Soviet cropland and were theoretically owned by the collectives' members who work the farms. The men who run the tractor stations have had the final say on what farm work gets done when. Now, however, the collectives may own their own machinery and may exercise a little more freedom in their operations.

In January, the Khrushchev regime had abolished compulsory deliveries to the state of part of the output of small private farm holdings. Collective farm members are allowed now to keep small private plots on the side for their own use, and some very marginal land is allowed to remain in private hands. Now, both types of land holders have more freedom to sell their produce or to use it themselves.

Government payments to farmers have also been on the rise. Between 1952 and 1955, present income rose an estimated 40%. Farmers' meat prices were raised sharply in 1953 and their grain earnings were upped in 1954 for the first time since the mid-1930's.

Similarly, total Soviet farm output has risen, too, according to estimates by U.S. authorities. The rise is thought to have been 25% between 1953, the year of Stalin's death, and 1956. (A record harvest was gathered in the latter year.) The reasons for the increased output are said to include better incentives for farmers, plus the opening up of new acreage in Siberia. Cotton and sugar beets were among the biggest gainers.

However, after the new records were set in 1956, drouth struck in 1957 and production fell accordingly. Total grain output was 15% less, dropping to 100 million metric tons, barely more than the pre-war production of 20 years before. Cotton production went down 8% to 5.7 million bales. The corn crop was described as a "dismal failure."

The time table for Russia's agricultural supremacy appears to be a little ambitious, with Khrushchev expressing confidence that food production so far as meat and milk are concerned, will equal that of the U.S. in 1961.

U.S. farm specialists have termed this goal as being "ridiculously high for so short a time," since the Russians would have to boost their milk output more than 40%, and other commodities to a similar extent.

The Soviets are likely to find that it is much easier to set goals than to achieve them. Agriculture in that country has been plagued with many fundamental problems that are still far from being overcome. The Russians are considered to be backward in farm research and mechanization. They are short of fertilizer, certainly a critical factor, and their farm storage and distribution facilities aren't adequate in all areas. Irrigation systems are insufficient to compensate for severe drouth, and the country has had little experience in the type of corn-and-livestock economy it is now trying to develop. But of most significance to the trade in the U.S., is the fertilizer situation in Russia:

"They have about half the fertilizer they need," is the observation of one U.S. expert. Further, they plan to nearly double production of manufactured fertilizer to 19.6 million tons by 1960, which would be a big upswing from the estimated 11.7 million tons produced there last year. A shortage of sulfuric acid is reported to be a key problem in plant food production.

Even with plenty of fertilizer, farm equipment, and better management, it is difficult to imagine much real enthusiasm being generated on the part of the peasants who remember too vividly their shameful treatment at the hands of Stalin and his henchmen in years past.

His farm collectivization drive, beginning in 1929, was characterized by the force of arms to take away from the peasants their lands, equipment and livestock, and the burning of their homes to make sure they would not be tempted to sneak back to their old places. Those who resisted this action were summarily shot. Stalin, it will be remembered, once boasted that his campaign had caused the death of 10 million peasants.

Khrushchev is making a rather desperate gamble in granting more freedom to the farmers. But he is in a squeeze to get more agricultural production, and he realizes that it can't be done without compromising Marxist principles.

The food situation in Russia is critical enough that if the present leader fails to achieve at least some success in stepping up production, his prestige and power are going to suffer. In Russia, a leader can't afford to lose face, because sometimes the head comes off with the face.

It isn't likely that Russia is to become a food exporting nation right away, but the time could come. Production there is going to increase some, no doubt . . . those note-taking agriculturists who visited us recently took home with them a lot of know-how which may reflect later on in more output from Soviet soil.

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Associated Publications—The Northwestern Miller, The American Baker, Farm Store Merchandising, Feedstuffs, Milling Production.

MEETING MEMOS

May 21—Pacific Northwest Regional Grain Sanitation Committee, Spring Meeting, Walla Walla, Wash.

June 5-6 — Pacific Northwest Grain Dealers Assn., Annual Convention, Davenport Hotel, Spokane, Wash.

EDITOR'S NOTE: The listings above are appearing in the Meeting Memos for the first time this week.

April 22 — Western Agricultural Chemicals Assn., Spring Meeting, Hotel Biltmore, Los Angeles; C. O. Barnard, 2466 Kenwood Ave., San Jose 28, Cal., executive secretary.

April 30 — Manufacturing Chemists' Assn. Precautionary Labeling Conference, Shamrock Hotel, Houston, Texas.

May 14-15—Pennsylvania Plant Food Educational Society, Butler County, Pa.

May 15-23—Series of Fertilizer Meetings sponsored by the Virginia Polytechnic Institute Agricultural Extension Service; May 15 at Virginia Agricultural Experiment Station, Blacksburg; May 21 at Piedmont Research Station, Orange; May 22 at Eastern Virginia Research Station, Warsaw; May 23 at Southside Research Station, Charlotte.

May 19-21—Chemical Specialties Manufacturers Assn., Midyear Meeting, Netherland Plaza Hotel, Cincinnati.

May 21-24 — Western Chapter, National Shade Tree Conference, Disneyland Hotel, Anaheim, Cal., C. E. Lee, 601 W. 5th St., Los Angeles 53, Cal., secretary-treasurer.

May 22-23—Soil Science Society of North Carolina, First Annual Meeting, Williams Hall, North Carolina State College, Raleigh, N.C.

June 4—Executive Committee, Fertilizer Safety Section, National Safety Council, Hotel Roanoke, Roanoke, Va. Time: 9 a.m.

June 9-11—Association of Southern Feed & Fertilizer Control Officials, Heart of Atlanta Motel, Atlanta, Ga., Bruce Poundstone, University of Kentucky, Lexington, Ky., Secretary-Treasurer.

June 12-14 — Manufacturing Chemists' Assn., 86th Annual Meeting, The Greenbrier, White Sulphur Springs, W.Va.

June 15-18—National Plant Food Institute, Annual Meeting, Greenbrier Hotel, White Sulphur Springs, W. Va.

June 18-19—Annual meeting, American Grassland Council, North Carolina State College, Raleigh.

June 25-27—Pacific Branch, Entomological Society of America, San Diego, Cal.

June 28—Del-Mar-Va Peninsula Fertilizer Assn., Annual Meeting, Ocean City, Md.

July 8-10—Pacific Northwest Plant Food Assn., Ninth Annual Regional Fertilizer Conference, Pocatello, Idaho.

July 13-15—Plant Food Institute of Virginia and North Carolina, Summer meeting, Cavalier Hotel, Raleigh, N.C.

July 18-19—Southwest Fertilizer Conference and Grade Hearing, Buccaneer Hotel, Galveston, Texas.

July 29-30—Annual Fertilizer Industry Conference Sponsored by the Alabama Polytechnic Institute Experiment Station; Black Belt Substation near Marion Junction, Ala. (July 29) and Prattville, Ala. Experiment Field (July 30).

July 30—Kentucky Fertilizer Conference, Greenville, Ky.

Aug. 20-24—Canada Fertilizer Assn. (formerly Plant Food Producers of Eastern Canada), Annual Meeting, Manoir Richelieu, Murray Bay, Quebec.

Sept. 4—Grassland Field Day, Rutgers University Dairy Research Farm, Beemerville, N.J.

Oct. 14-15—Western Agricultural Chemicals Assn., Annual Meeting, Villa Hotel, San Mateo, Cal., C. O. Barnard, 2466 Kenwood Ave., San Jose 28, Cal., Executive Secretary.

Oct. 20—Annual Sales Clinic of Salesmen's Assn. of the American Chemical Industry, Inc., Roosevelt Hotel, New York.

Oct. 20-21—Fertilizer Section, National Safety Council, annual fall meeting, La Salle Hotel, Chicago, Ill.

Oct. 22-24—Pacific Northwest Plant Food Assn., Annual Meeting, Gearhart, Ore., Leon S. Jackson, P.O. Box 4623, Sellwood-Moreland Station, Portland, Ore., secretary.

Oct. 28-29—Northwest Garden Supply Trade Show, Masonic Temple, Portland, Ore.

Oct. 29-31—National Agricultural Chemicals Assn., 25th annual meeting, Bon Air Hotel, Augusta, Ga.

Nov. 9-11—California Fertilizer Assn., 35th Annual Convention, Ambassador Hotel, Los Angeles, Sidney H. Bierly, 475 Huntington Drive, San Marino 9, Cal., General Manager.

Nov. 24-25—Entomological Society of America, Eastern Branch, Annual Meeting, Lord Baltimore Hotel, Baltimore.

Dec. 1-4—Entomological Society of America, Annual Meeting, Hotel Utah, Salt Lake City.

Dec. 3-5—Agricultural Ammonia Institute, Annual Meeting, Morrison Hotel, Chicago, Jack F. Criswell, Claridge Hotel, Memphis, Executive Vice President.

Dec. 9-11—Chemical Specialties Manufacturers Assn., Annual Meeting, Commodore Hotel, New York.

Dec. 17-18—Beltwide Cotton Production Conference, Rice Hotel, Houston, Texas, sponsored by the National Cotton Council.

Jan. 20-22, 1959—California Weed Conference, Santa Barbara, Cal.

CALENDAR FOR 1958-59

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Club Root Quarantine Extension Proposed

SACRAMENTO—Discovery of four new infected properties has prompted a proposal to extend the area under quarantine for club root disease in San Mateo County, Cal. All the properties are outside the present quarantine area, according to W. C. Jacobsen, California director of agriculture, who has the authority to extend the quarantine.

Club root disease attacks broccoli, Brussels sprouts, cabbage and cauliflower. It may be spread by the movement of infected plants and soil from infected fields on used farming equipment.

If adopted, the amended quarantine would include all that area of San Mateo County not presently under quarantine lying south of Purisim Creek and west of Skyline Boulevard.

The quarantine prohibits the movement of plants with roots from the area under quarantine and requires that farming equipment be disinfected or thoroughly washed and steam cleaned to remove all soil before being moved outside the area.

OKLAHOMA TONNAGE

OKLAHOMA CITY—March fertilizer shipments in Oklahoma totaled 9,903 tons.

Classified Ads

Classified advertisements accepted until Tuesday each week for the issue of the following Monday.

Rates: 15¢ per word; minimum charge $2.25. Situations wanted, 10¢ a word; $1.50 minimum. Count six words of signature, whether for direct reply or keyed care this office. If advertisement is keyed, care of this office, 20¢ per insertion additional charged for forwarding replies. Commercial advertising not accepted in classified advertising department. Display advertising accepted for insertion at minimum rate of $11 per column inch.

All Want Ads cash with order.

FOR FAST ACTION AND RESULTS try Croplife's CLASSIFIED ADVERTISING

Ortho Sales Show First Quarter Gain

SAN FRANCISCO—Sales of Ortho garden supplies showed a 35% increase in the first quarter, according to Arthur W. Mohr, president of California Spray-Chemical Corp. of Richmond. Calspray sales figures, from its 16 district offices and 45 distribution plants located coast to coast, indicate that the upward surge in sales is national in scope. Calspray sales totals increased 62% in the two years 1956 and 1957.

FORMULATORS!

ESPESOL 5 now registered for labeling purposes as a XYLENE-BASE solvent!

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Smith-Rowland Co., Inc.
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- Keeping all segments informed of all industry news.
- Providing feature material designed to help manufacturers and mixers to do a better job, to help dealers sell and to help farm advisors and educational people make sound recommendations.
- Keeping all industry alert to current and proposed government action.
- Providing a channel through which news and advertising can reach all segments of the industry.

This new approach to business journalism for the agricultural chemical industry is being made by a company with 80 years of experience in newsgathering and publishing and one which has built an unchallenged reputation for reliability and service. Advertising of your products and services in Croplife will mean *richer sales fields* for you!

National Coverage Weekly . . .

Croplife's carefully controlled circulation provides national weekly coverage of manufacturers, formulators, mixers and ingredient suppliers.

Plus Regional Coverage by Marketing-areas . . .

In addition a unique regional circulation plan provides advertisers with a selective marketing-area coverage of wholesale and retail dealers and farm advisory personnel.

In addition to its national coverage, Croplife offers a selective regional circulation plan in these marketing-areas

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